U.S. Department of the Interior
Bureau of Land Management
White River Field Office
73544 Hwy 64
Meeker, CO 81641

ENVIRONMENTAL ASSESSMENT

NUMBER: CO-110-2006-021-EA

CASEFILE/PROJECT NUMBER: COC69322

Proposed natural gas trunk pipeline – COC69322
Proposed natural gas pipeline – Unit 66878X – COC69322
Proposed natural gas compressor station – private property
Proposed well at location L14 1N100 (#4412C) - Lease COC65645
Proposed well at location N15 1N100 (#4414D) - Lease COC61173

PROJECT NAME: Calamity Ridge Unit Exploration Project

LEGAL DESCRIPTION: T1N, R99W, Sec. 19, 28, 30, 31, 33, 34
T1N, R100W, Sec. 10, 14, 15, 23, 24, 36
T1N, R99W, Sec. 2, 11
T1S, R100W, Sec. 1, 11, 12, 14, 15

APPLICANT: EnCana Oil & Gas (USA) Inc.

ISSUES AND CONCERNS: An existing range project (corral and loading chute) is located on the proposed well pad N15 1N100 (4414D), Section 22.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

Background/Introduction: The project area includes the Calamity Ridge Unit - 20 sections in the east and south of Township 1 North, Range 100 West - and the northern part of the Canary Unit in Townships 1 North and 1 South, Ranges 99 and 100 West. In addition to the facilities for which the applicant requires BLM authorization, a compressor station is proposed on the same private lands on which the two previously drilled wells are located. All access for the proposed actions would be on existing roads. Location N15 1N100 would be on Rio Blanco County (RBC) Road 122. Location L14 1N100 would be just off RBC Road 122 on a road that was used for access to the two previously developed well pads.

An on-site visit by EnCana, BLM and WestWater Engineering specialists took place on October 28, 2005.

Proposed Action: EnCana has submitted an SF-299, right-of-way (ROW) application for a trunk pipeline along Calamity Ridge (County Road 122), which is serialized as COC69322and a gathering pipeline along Trail Canyon (County Road 24X) on Unit 66878X, also serialized as COC69322. No changes or improvements of those roads are anticipated as part of this project.

This environmental assessment (EA) addresses the impacts from developing the following oil and gas facilities (see Figure 1):

- a 6-inch natural gas gathering pipeline from those well pads traveling along Calamity Ridge eleven miles south to an existing pipeline,
- a natural gas gathering pipeline from a well pad location in Trail Canyon in the Canary Unit traveling three and one-half miles south to an existing pipeline.
- a natural gas compressor station located on private property, and
- two proposed well pad locations in the Calamity Ridge Unit, locations N15 1N100 and L14 1N100, and a gathering pipeline between them

The total length of pipeline on BLM and Private is 71,093 feet. The ROW width is 60 feet reverting back to a permanent 30 foot ROW width after construction and reclamation. The ROW length on BLM is approximately 61,293 (~50,866 feet for Calamity Ridge and ~20,227 feet for Trail Canyon pipelines). The total acreage disturbed during the pipeline construction would be 98.1 acres (60 feet wide). The term of the ROW would be 30 years ending December 31, 2035. The gathering pipeline in Trail Canyon is from the O28 1N99 well pad that was analyzed in the environmental assessment (EA) CO-110-2005-206-EA (October 6, 2005) which will hook up to an existing pipeline tie in. At the time of that EA, a route for the pipeline from the O28 1N99 well had not been designated; and therefore was not previously analyzed.

The two newly proposed well pads in the Calamity Ridge Unit are near two other well pads constructed recently by the applicant on private land in Sections 14 and 23, Township 1 North, Range 100 West.

The table below describes the estimated surface disturbance associated with the proposed actions. Total initial disturbance for all – pipelines, well pads and facilities - is estimated at 138.4 acres – 35.3 acres for the well pads and their gathering lines, 98.1 acres for the Calamity Ridge and Trail Canyon pipelines. About 119.7 acres would be on public land. After successful reclamation of the disturbed areas, long-term disturbance is estimated at about eight acres, less than three acres on public land.

Surface Disturbance Related to Calamity Ridge Exploration Project (Acres)					
	Locations		Pipelines		Total
	Initial	Long-term	Initial	Long-term	
Calamity Ridge Pipeline	5.0*	5.0*	70.2	0.0	75.2
Trail Canyon Pipeline	--	--	27.9	0.0	27.9
Well Pad L14 1N100	3.3	1.3	25.0	0.0	28.3
Well Pad N15 1N100	3.6	1.6	3.4	0.0	7.0
Total	11.9	7.9	126.5	0.0	138.4
BLM	6.9	2.9	112.8	0.0	119.7

Numbers may not add due to rounding.
* Compressor station.

No Action Alternative: The proposed well pads and pipelines would not be constructed.

NEED FOR THE ACTION: All of the proposed or potential actions analyzed in this EA are being pursued by EnCana in order to exercise its federal mineral lease rights.

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: White River Record of Decision and Approved Resource Management Plan (ROD/RMP).

Date Approved: July 1, 1997

Decision Number/Page: Pages 2-5 thru 2-6

Decision Language: "Make federal oil and gas resources available for leasing and development in a manner that provides reasonable protection for other resource values."

The proposed action has been reviewed for conformance with this plan (43 CFR 1610.5, BLM 1617.3). The action conforms to the decisions/pages of the plan listed above.

AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES / MITIGATION MEASURES:

STANDARDS FOR PUBLIC LAND HEALTH: In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. These standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Because a standard exists for these five categories, a finding must be made for each of them in an environmental analysis. These findings are located in specific elements listed below.

Some of the activities in the proposed action would occur on private land. For those lands, the findings with regard to public land health standards are meant only as general indicators of resource condition. They imply no obligation on the part of the private landowner or BLM with regard to the health of that landscape.

CRITICAL ELEMENTS

AIR QUALITY

Affected Environment: The project area is within a Class II Prevention of Significant Deterioration (PSD) air quality area. The nearest Class I PSD area, the Flat Tops Wilderness Area, is more than 50 miles from the project area.

The principal air quality parameter likely to be affected by construction of well pads, roads, and pipelines is the inhalable particulate level (PM_{10} - particles ten microns or less in diameter) associated with fugitive dust. Although no monitoring data are available for the survey area, it can be surmised that the air quality is good because the Colorado Air Pollution Control Division (APCD) estimates the maximum PM_{10} levels (24-hour average) in rural portions of western Colorado like the Piceance Basin to be less than 50 micrograms per cubic meter. This estimate is well below the National Ambient Air Quality Standard (NAAQS) for PM_{10} (24-hour average) of 150 $\mu g/m^3$.

The natural gas compressor station to be located on private property in Fletcher Gulch (Figure 2) is assumed to be equipped with engines rated at 2400 horsepower at full capacity. The principal air quality parameters likely to be affected by operation of these compressor engines are ambient concentrations of nitrogen dioxide (NO_2) and carbon monoxide (CO). No data for background concentrations of these gases are available for the Piceance Basin; however, the entire State of Colorado is designated as having air quality better than the 100 $\mu g/m^3$ NAAQS for NO_2 (annual average). Similarly, RBC is designated as "unclassifiable/attainment" for CO and is assumed to be in attainment with the 40,000 $\mu g/m^3$ (1-hour average) and 10,000 $\mu g/m^3$ (8-hour average) NAAQS for CO. (Area designations for RBC and other areas of Colorado are listed in 40 CFR, part 81.306).

Environmental Consequences of the Proposed Action: The construction of the facilities proposed for the project area – well pads, tie-in pipelines, a trunk pipeline, and a compressor station - would result in short-term, local impacts on air quality during and after construction, due to dust being blown into the air. However, airborne particulate matter would not exceed Colorado air quality standards on an hourly or daily basis. Following successful revegetation of the sites, airborne particulate matter should return to near pre-construction levels.

Operation of the proposed compressor is expected to generate emissions that are proportional to those estimated by BLM in Garfield County in 1999. (USDI BLM, 1999) The 2400 horsepower assumed for the engines at this station represents 12.6 percent of the 19,000 horsepower analyzed in that study. Proportionate ambient concentrations of pollutants generated by the Calamity Ridge compressor are therefore expected to be 192-200 $\mu g/m^3$ (one hour) and 58-78 $\mu g/m^3$ (eight hour) for CO and 8-10 $\mu g/m^3$ (annual) for NO_2. These levels are all far below the respective NAAQS.

Environmental Consequences of the No Action Alternative: None.

Mitigation: The proponent is responsible for abatement of dust created by construction or by project-related traffic. Potential dust abatement tools could include, among others, periodic watering as described in EnCana's 13 Point Surface Use Plan (2.K), other methods of treating road surfaces, and restriction of vehicle speed to levels that would minimize dust.

Permitting of all regulated air pollution sources through the Colorado Department of Public Health and Environment (CDPHE), Air Pollution Control Division, will assure compliance with all federal and state standards. The proponent will provide evidence to BLM that necessary permits have been acquired.

CULTURAL RESOURCES

Affected Environment: The proposed Calamity Ridge trunk pipeline and compressor site were inventoried at the Class III (100% pedestrian) level between September 25th and 28th 2005 and October 11, 2005 along most of its length (Conner and Davenport 2005, Compliance Dated 10/21/2005, Conner 2005, Compliance Dated 11/21/2005, Conner 2005, Compliance Dated 12/12/2005). The 1.75 mile section at the southern end of the route was inventoried on November 14th 2005. No additional significant cultural resources were identified by these inventories though one reported site location was traversed with no new materials located on the surface and archaeological clearance was recommended.

The two proposed well pads were inventoried at the Class III (100% pedestrian) level on October 12th 2005 (Conner and Davenport, 2005; Compliance Dated, 10/27/2005). A 40-acre block was inventoried around the well pads. The access road to the N15 1N100 well pad was included in that block. The L14 1N100 well pad has no new access road. No new sites or isolated finds were identified in the inventory.

The Trail Canyon pipeline route was inventoried at the Class III (100% pedestrian) level on October 12th 2005 (Conner and Davenport, 2005; Compliance Dated, 10/20/2005). No new sites or isolated finds were identified in the inventory.

Environmental Consequences of the Proposed Action: Construction of the proposed well pads and their associated access roads and tie-in pipelines would not impact any known eligible cultural resources.

One site that is hard to define but does not appear eligible may be impacted, site 5RB 1519.

Environmental Consequences of the No Action Alternative: None

Mitigation: 1. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days, the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places,

- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary),

- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

2. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4 (c) and (d), the holder must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the AO.

3. A monitor will be required on the Calamity Ridge pipeline in the vicinity of site 5RB 1519.

FLOOD PLAINS, WETLANDS, RIPARIAN ZONES, AND ALLUVIAL VALLEYS

Affected Environment: No flood plains, wetlands, riparian zones, or alluvial valleys will be encountered with construction of the proposed well pads, access roads, pipelines, or the compressor site. The portion of Fletcher Gulch below well pad L14 1N100 has a riparian zone along the bottom.

Environmental Consequences of the Proposed Action: No impacts are expected to occur to any flood plain, wetland, riparian zone, or alluvial valley from the actions proposed. The riparian zone in Fletcher Gulch below well pad L14 1N100 would be protected and perhaps enhanced by mitigation proposed in the Water Resources section to stabilize the west bank of Fletcher Gulch below the well pad.

Environmental Consequences of the No Action Alternative: None.

Mitigation: None.

INVASIVE, NON-NATIVE SPECIES

Affected Environment: The Calamity Ridge Pipeline route was inventoried for invasive and noxious weed species on October 6 and 7, 2005. The proposed route was inventoried 50 feet on either side of the flagged centerline. The proposed route traverses mountain shrub and

mountain sagebrush plant communities that are well vegetated. No noxious weed species were observed within any areas surveyed.

The Trail Canyon Pipeline was inventoried for invasive and noxious weed species on October 31, 2005. The proposed route was inventoried 50 feet on either side of the flagged centerline. The route traverses mostly basin sagebrush alluvial bottoms. No noxious weed species were observed within any areas surveyed. Some cheatgrass was observed in scattered location along the route. Scattered mullen plants were observed along disturbed areas of RBC Road 24X.

Well pads L14 1N100 and N15 1N100 along with their proposed gathering pipeline routes were inventoried for invasive and noxious weed species on November 3, 2005. Approximately 25 acres at each proposed well pad were inventoried within an area of 600 feet around the well stake. The proposed access road and associated pipelines outside the areas inventoried for the well pads were inventoried 50 feet on either side of the flagged route. No noxious weed species were observed within any areas surveyed. Some cheatgrass was observed within a pinyon/juniper burn area at the edge of location N15 1N100.

The Compressor Site was inventoried for invasive and noxious weed species on October 7, 2005. The surveyed (wooden lath and flagging) location included an area 50 feet outside the marked boundary. The location occurs on basin sagebrush dominated alluvial soil in the bottom of Fletcher Gulch. No noxious weed species were observed within any areas surveyed. Some scattered plants of bull thistle were observed near the location.

Environmental Consequences of the Proposed Action: The disturbance associated with the proposed action could create a noxious weed problem by importing weed seed on vehicles and equipment or by having suitable conditions present (non-vegetated disturbed areas) for introduction of noxious weeds by other vectors. In addition to noxious weeds, invasive non-native species such as cheat grass could also establish on these areas. Establishment of noxious or invasive weeds would create problems through seed production in proportion to the number of plants and the duration of seed production. Increased seed production of noxious or invasive plants could aggressively compete with or exclude desired vegetation during reclamation. The noxious or invasive species seed production could also encourage the spread of these unwanted plants into the adjacent native plant communities.

Environmental Consequences of the No Action Alternative: None

Mitigation: Eliminate any noxious or invasive plants before any seed production has occurred. Eradication should make use of materials and methods approved in advance by the Authorized Officer.

The operator will clean all off-road equipment to remove seed and soil prior to commencing operations on public lands within the project area.

Other mitigation is included in the Vegetation section.

MIGRATORY BIRDS

Affected Environment: The sagebrush, mountain shrub and pinyon/juniper communities found within the project area support a large array of migratory birds that nest during the months of May, June and July. Bird populations associated with these communities that have a high conservation interest (Rocky Mountain Bird Observatory, Partners in Flight program) are listed in the table below. There are two distinct sagebrush communities in the project area. In the drainage bottoms, basin big sagebrush dominates and often contains a greasewood component. These sagebrush stands are often dense and exceed six feet in height. On the ridge tops and sagebrush flats, Wyoming big sagebrush dominates with pinyon and juniper often encroaching on the edges. Green-tail towhee is more typical in Wyoming sagebrush, while the sparrows may occur in both sagebrush types. There are no specialized or narrowly endemic species known to occupy the project area.

Birds of High Conservation Priority by Habitat Association

Sagebrush	Pinyon/Juniper	Mountain Shrub
Brewer's sparrow Green-tailed towhee	Pinyon jay Black-throated gray warbler Juniper titmouse Gray flycatcher Violet-green swallow	Green-tailed towhee Virginia's warbler Blue grouse Common poorwill

The proposed well sites and pipelines would occur in all three habitat associations.

Environmental Consequences of the Proposed Action: Construction of the well pad in Fletcher Gulch (L141N100) would remove approximately 3.3 acres of sagebrush and pinyon/juniper habitat and the well pad adjacent to RBC Road 122 (N151N100), located in pinyon/juniper, would remove 3.6 acres of habitat. The gathering pipelines for these two well pads would pass through primarily pinyon/juniper habitat; construction of these pipelines would remove 28.4 acres of habitat. Construction of the proposed pipeline south along Calamity Ridge would pass through mountain shrub and some pinyon/juniper habitat adjacent to CR 103 and remove 82.6 acres of habitat. Construction of the pipeline in Trail Canyon would parallel RBC CR Road 24X and travel through sagebrush and pinyon/juniper habitat and remove 28.1 acres of habitat.

Construction during the migratory bird nesting season (May through July period) would be disruptive and nests could be lost. Recent studies suggest that nesting density tends to be reduced (i.e., 50%) in close proximity (i.e., within 300') of roads. Typically, one pair of high interest bird species occurs per hectare. Although the proposed actions would represent an incremental and longer term reduction in big sagebrush, mountain shrub and pinyon/juniper habitat, implementation of the proposed actions would have no measurable influence on the abundance or distribution of breeding migratory birds at any landscape scale.

The development of reserve pits in the project area may be expected to attract waterfowl and other migratory birds for purposes of resting, foraging, or as a source of free water. It has recently been brought to the White River Field Office's attention that migratory waterfowl (i.e., teal and gadwall) have contacted oil-based drilling fluids stored in reserve pits during or after

completion operations and are suffering mortality in violation of the Migratory Bird Treaty Act. The extent and nature of the problem is not well defined, but is being actively investigated by the federal agencies and the companies. Until the vectors of mortality are better understood, management measures must be conservative and relegated to preventing bird contact with produced water and drilling and completion fluids which may pose a problem (e.g., acute or chronic toxicity, compromised insulation).

Environmental Consequences of the No Action Alternative: None

Mitigation: The operator shall prevent use by migratory birds of reserve pits that store or are expected to store fluids which may pose a risk to such birds (e.g., migratory waterfowl, shorebirds, wading birds and raptors) during completion and after completion activities have ceased. Methods may include netting, the use of bird-balls, or other alternative methods that effectively prevent bird use and that meet BLM approval. It will be the responsibility of the operator to notify the BLM of the method that will be used to prevent bird use two weeks prior to beginning completion activities. The BLM-approved method will be applied within 24 hours after completion activities have begun. All lethal and non-lethal events that involve migratory birds will be reported to the Petroleum Engineering Technician immediately.

THREATENED, ENDANGERED, AND SENSITIVE ANIMAL SPECIES (includes a finding on Standard 4)

Affected Environment: The area of the proposed action includes no federally-listed animal species and no habitat for such species. The special status species of concern that occur in the general project vicinity include two Colorado BLM Sensitive Species, northern goshawk and greater sage grouse.

The potential for this project influencing goshawk nesting activity is extremely low. Although preferred goshawk habitat normally consists of spruce/fir or spruce/fir mixed with aspen, contiguous tracts of such habitat does not occur along the project corridor. Goshawk are documented as nesting in the region's extensive pinyon/juniper woodlands, but the contribution of pinyon/juniper woodlands to the distribution, abundance, and population viability of the goshawk is thought to be of small consequence. As discussed in the Terrestrial Wildlife Section, mature pinyon/juniper and juniper-dominated woodlands surrounding the access roads, proposed pipeline routes and well locations covered in this analysis were surveyed for raptor nesting during November, 2005. Nine raptor stick nests were found in mature juniper trees near well location L14 1N100 (see table with stick nest locations in Terrestrial Wildlife section), but there is no reasonable probability that these sites (i.e., refurbished magpie nests in Utah junipers on low elevation valley margins) represent those of goshawk.

The project area is the top of Calamity Ridge, with Fletcher Gulch extending to the west and north and Trail Canyon extending to the east and south. The top of Calamity Ridge is interspersed with sagebrush, mountain shrub and scattered pinyon trees while the bottoms of Fletcher Gulch and Trail Canyon are vegetated with big sagebrush. Lower hillsides are covered with pinyon/juniper while the upper slopes are thick mountain shrub, primarily serviceberry.

The top of Calamity Ridge is mapped as greater sage-grouse overall range. This ridgeline is generally dominated by serviceberry communities that are variously interspersed with pinyon pine regeneration—a type that has little functional utility as sage-grouse habitat. The pipeline route intermittently intersects about 3000 meters of open mixed shrub communities that offer characteristics marginally suitable for sage-grouse (small numbers of sage-grouse are occasionally seen along the ridge), but these tracts are limited in extent and have no effective travel corridors with habitat cores to the south and north. There are no leks or production areas mapped within several miles of the project area.

Environmental Consequences of the Proposed Action: The mature pinyon/juniper woodland habitat suitable for raptor nesting adjacent to the proposed well locations, access roads and pipelines was surveyed in November, 2005. The nest sites documented in Fletcher Gulch appear to have been originally constructed by magpie and it is possible that 1-3 of these sites has seen subsequent use by woodland raptors (long-eared owl most likely). There is no reasonable probability that a goshawk would use these nests in this situation.

Construction of the pipeline down Calamity Ridge will traverse approximately 8 miles of general greater sage-grouse range. Although sagebrush removal generally has potential to adversely affect sage-grouse habitat suitability, because the pipeline is situated immediately adjacent to a well traveled county road and the route involves serviceberry-dominated communities with limited utility as sage-grouse habitat, the longer term effects of sagebrush removal would have no practical consequence on the utility or character of sage-grouse habitats. Because the proposed pipeline route is more than two miles from a lek, neither the timing limitation nor the NSO called for by the lease would become operative.

Environmental Consequences of the No Action Alternative: None.

Mitigation: See Terrestrial Wildlife Section for the requirements that re-surveys for raptor nesting will be conducted on the project area should development occur after the onset of the 2006 nesting season.

Finding on the Public Land Health Standard for Threatened & Endangered species: The project area offers limited utility for northern goshawk and greater sage-grouse, but otherwise meets the standard for these special status species. Goshawks are peripheral breeding species in pinyon/juniper woodlands on the Calamity Ridge and in the Piceance Basin. Surveys of all suitable nesting habitat potentially impacted by the project revealed no evidence of nest activity reminiscent of goshawk.

The project would have little practical influence on seasonal sage-grouse habitats, but removal of woody vegetation immediately adjacent to a well-traveled county road and subsequent reclamation with native vegetation forms are not inconsistent with maintenance of habitat character for incidental use.

THREATENED, ENDANGERED, AND SENSITIVE PLANT SPECIES (includes a finding on Standard 4)

Affected Environment: Two special status species (SSS) of plants are known to occur along Calamity Ridge in close proximity to the facilities being proposed for development. The Piceance twinpod (*Physaria obcordata)*, a federally listed threatened species, occurs in several locales along the west slope of Calamity Ridge. Known occurrences of this plant are within ½ mile of well pad N15 1N100. The Piceance bladderpod *(Lesquerella parviflora)*, a BLM sensitive species, occurs on Calamity Ridge within a couple of miles of the Calamity Ridge pipeline.

Both plant species have a very specific affinity in this area to relatively barren shale outcrops of the Parachute Creek Member of the Green River Formation. This formation is fairly easy to distinguish from other formations in the area by its' light gray color.

The Calamity Ridge Pipeline route was inventoried for SSS plants on October 6 and 7, 2005. The proposed route was inventoried 50 feet either side of the flagged centerline. The proposed route traverses mountain shrub and mountain sagebrush plant communities that are well vegetated. The SSS plants likely to occur along this route do not occur within the plant communities encountered on the route. They are restricted to relatively barren exposures of the Green River Formation. No barren shale outcroppings of the Green River Formation that could be potential habitat occur along the proposed route. No SSS plant species were found within the areas inventoried for this pipeline.

The Compressor Site was inventoried for SSS plants on October 7, 2005. The survey (wooden lath and flagging) included an area 50 feet outside the marked boundary. The location occurs on alluvial soil in the bottom of Fletcher Gulch. No SSS plants were found within the area inventoried. No barren shale outcroppings of the Green River Formation (potential habitat) occur within the area inventoried for the compressor site.

The Trail Canyon Pipeline was inventoried for SSS plants on October 31, 2005. The proposed route was inventoried 50 feet either side of the flagged centerline. A third SSS plant, the Dudley Bluffs bladderpod (*Lesquerella congesta*), a federal threatened species, occurs within 3 miles of the proposed route on an outcrop of the Green River Formation in Duck Creek. The proposed pipeline route occurs on alluvial soils in the bottom of Trail Canyon and in Duck Creek. A small segment of the route crosses a couple of ridge points before dropping to the bottom of Duck Creek. This short segment is on Uinta Formation. No outcrops of the Green River Formation (potential habitat) are encountered by the proposed pipeline route. No SSS plant species were found within the areas inventoried for this pipeline.

Well pads L14 1N100 (#4412C) and N15 1N100 (#4414D) along with their proposed gathering pipeline routes were inventoried for SSS of plants on November 3, 2005. Approximately 25 acres at each proposed well pad were inventoried within an area of 600 feet around the center stake. The proposed access road and associated pipelines outside the areas inventoried for the well pads were inventoried 50 feet on either side of the flagged route.

No SSS plant species were identified within the areas surveyed for the two proposed well pads or along the pipeline route. Both well pads and the pipeline route lie below the lower most outcrop of the Green River Formation. These proposed facilities all occur on the Wasatch Formation which is not potential habitat for SSS plants.

Environmental Consequences of the Proposed Action: Based upon the absence of any SSS plants during surveys of the proposed locations and the lack of any potential habitat, it can be safely assumed that no SSS plants are expected to occur at any of the proposed project locations. No impacts to any SSS plant is expected from the actions proposed.

Environmental Consequences of the No Action Alternative: None

Mitigation: None

Finding on the Public Land Health Standard for Threatened & Endangered species: Public lands in the project area currently meet the standard and would continue to meet the standard after implementation of the proposed action.

WASTES, HAZARDOUS OR SOLID

Affected Environment: There are no known hazardous or other solid wastes on the subject lands. No hazardous materials are known to have been used, stored or disposed of at sites included in the project area.

Environmental Consequences of the Proposed Action: No listed or extremely hazardous materials in excess of threshold quantities are proposed for use in this project. While commercial preparations of fuels and lubricants proposed for use may contain some hazardous constituents, they would be stored, used and transported in a manner consistent with applicable laws, and the generation of hazardous wastes would not be anticipated. Solid wastes would be properly disposed of.

Environmental Consequences of the No Action Alternative: No hazardous or other solid wastes would be generated under the no-action alternative.

Mitigation: The operator shall be required to collect and properly dispose of any solid wastes generated by the proposed actions.

WATER QUALITY, SURFACE AND GROUND (includes a finding on Standard 5)

Affected Environment: Surface Water: The proposed well pads and pipelines are located on or near Calamity Ridge which forms a divide between White River tributaries to the north and Yellow Creek to the east, which is itself a tributary of the White River. The following drainages could be affected: Little and Big Duck Creeks, Middle Barcus Creek, Trail Canyon, Yellow Creek, Fletcher Gulch, and Spring Creek.

Water quality standards and guidance for drainages within the Lower Colorado River Basin are included in CDPHE-Water Quality Control Commission (WQCC) Regulation No. 37 (2004a). All project area drainages are tributary to the White River which is defined as Region 11 of the Lower Colorado River Basin. The mainstem of the White River in the project area is listed as Segment 12 of the White River, Fletcher Gulch and Spring Creek are included in Segment 13a, and Yellow Creek is included in Segment 13b.

A review of Colorado's 1989 Nonpoint Source Assessment Report (plus updates), the 305(b) report, the 303(d) list and the Unified Watershed Assessment was conducted to see if any water quality concerns have been identified (CDPHE, 2004a, 2004b, 2004c and 2004d). The State has classified segments 13a and 13b of the White River Basin as "Use Protected." The antidegredation review requirements in the Antidegredation Rule are not applicable to waters designated as "Use Protected." For those waters only the protection specified in each reach will apply. Segments 13a and 13b have been designated by the State as beneficial for the following uses: aquatic life warm 2, recreation 2, and agriculture. Minimum standards for both segments are listed for four parameters and include: dissolved oxygen 5.0 mg/l, pH = 6.5 – 9.0, Fecal Coliform = 2,000/100 ml, and E. Coli = 630/100 ml. Stream segments 13a and 13b retained their Recreation Class 2 designation after sufficient evidence was received that a Recreation Class 1a use was unattainable. It is noted that Segment 13b has a temporary modification for all numeric standards equal to current conditions; this modification has an expiration date of 2/28/09.

Lower Colorado River Basin Segment 4a has use classifications of aquatic life cold 2, recreation 2, water supply, and agriculture (CDPHE, 2004a). Segment 4a has a temporary modification for selenium with the limit being at the existing ambient quality. This temporary modification has an expiration date of 2/28/2009.

Ground Water: The project area is located within the Piceance Basin whose primary ground-water resource is the alluvium of the Colorado River and major tributaries (Topper et al., 2003). Saturated Tertiary rocks in the basin are comprised of two primary units, the Upper and lower Piceance Basin aquifers which are separated by the Mahogany confining unit. Primary hydrogeologic units within the Piceance Basin are listed in the following table.

Summary of Hydrogeologic Units

Hydrogeologic Unit	Thickness (ft)	Approx Avg Depth (ft)	Conductivity (ft/day)	Yield (gpm)	Transmissivity (ft^2/day)
Upper Piceance Basin aquifer	0 – 1,400	700	<0.2 to >1.6	1 to 900	610 to 770
Lower Piceance Basin aquifer	0 – 1,870	2,800	<0.1 to >1.2	1 to 1,000	260 to 380
Mesaverde aquifer	Averages 3,000	7,700	NL	NL	NL
Abbreviations: ft – feet, approx – approximate, avg – average, gpm – gallons per minute, and NL – not listed.					

Table information from Topper et al. (2003)

The State Division of Water Resources permit locator (DWR, 2005) was checked for information related to shallow ground water in the project vicinity. Only one well permit has been issued within Range 1 North and Township 100 West. The well was permitted in Section 17 (near Spring Creek) for commercial use. The lack of information on the well indicates that it was never constructed.

Environmental Consequences of the Proposed Action: Surface Water: The primary potential water quality impact would be from additional sediment resulting from construction of proposed drill pads, access roads, and pipelines. Removal of vegetative cover results in the potential for increased soil erosion near newly disturbed areas. Runoff-producing storm events could increase sediment loads in ephemeral channels. Depending on the soils affected, salt content in the sediment may also degrade water quality.

The magnitude of these impacts is dependent on the amount of surface disturbance and climatic conditions during the time the soils are exposed to the elements. Impacts would continue until mitigation has been implemented and proven to be successful. Such mitigation would include revegetating the unused portion of the well pads as soon as possible, placing gravel on areas that would not be revegetated, or placing storm water Best Management Practices (BMPs) to control runoff.

Additional water quality issues may arise if spills or leaks involving environmentally unfriendly substances are allowed to migrate off-site, contact surface water or penetrate alluvial water tables along downstream drainages. Contaminants having potential to be in direct contact with surface water would be detrimental to water quality as well as the health of riparian communities and wildlife in downstream reaches.

Ground Water: Impact on ground water resources by drilling for natural gas is not anticipated. Shallow aquifers are protected from hydrofracturing and the production of oil and gas by installation and cementing of surface and intermediate casing. The objective of surface and intermediate casing is specifically to isolate shallow aquifers. Hydrofracturing used to stimulate natural gas production of the Mesaverde Formation is anticipated to extend a maximum of 500 feet horizontally from each well bore and not vertically. Any ground water produced from the Mesaverde Formation would be hauled off and disposed of due to poor quality thereby preventing adverse impacts on surface water.

In the event of a leak or spill of contaminants, local ground water could be at risk. That risk would be minimized if applicable laws and BMPs are followed.

Environmental Consequences of the No Action Alternative: None.

Mitigation: Oil and gas development activities that exceed five acres of disturbance are required to obtain a storm water discharge permit from the Colorado Department of Public Health and Environment, Water Quality Control Division. As a condition of the permit, a Storm Water Management Plan (SWMP) will be developed showing how Best Management Practices (BMPs) are used to control runoff and sediment transport. The applicant is required to have a copy of the SWMP on file with the Meeker Field Office for disturbances that exceed five acres.

The White River Record of Decision and Approved Resource Management Plan (July, 1997) includes a list of standard Conditions of Approval to be applied to All Surface Disturbing Activities (COAs 1-12) and to Road Construction and Maintenance (COAs 13-62). The

applicant is required to be familiar with those standard COAs and to implement them as on-site conditions warrant.

The proposed access road crossing an unnamed tributary of Fletcher Gulch at the west end of well pad L14 1N100 will include an adequately sized culvert and will include suitable materials (e.g. rip-rap) to stabilize the channel at the upstream and downstream ends of the culvert. The crossing will be designed and constructed in accordance with BLM Manual 9112. The design, review, and evaluation would be accomplished under the direct supervision of a registered professional engineer. The crossing would be designed to minimize impacts on water quality and provide streambed stabilization downstream of the crossing.

The actively eroding gully along the north fill slope of pad L14 1N100 will be stabilized through the placement of additional fill material and/or rock.

The east pad corner (adjacent to the Fletcher Gulch west slope) of pad L14 1N100 will be sufficiently rounded or trimmed to provide adequate space for installation, function, and repair of stormwater best management practices (BMPs). The steep west slope of the Fletcher Gulch drainage below the east pad corner will be stabilized through application of seed, fertilizer (if necessary), and biodegradable fabric such as jute netting to promote increased density of vegetation.

The Operator will be responsible for complying with all local, state, and federal water quality regulations as well as provide documentation to the BLM that they have done so.

Finding on the Public Land Health Standard for water quality: Water quality in the affected stream segments currently meets water quality standards set by the State. By following proper mitigation measures outlined above, water quality will not be changed from present conditions.

CRITICAL ELEMENTS NOT PRESENT OR NOT AFFECTED:

No wild and scenic rivers, Areas of Critical Environmental Concern or wilderness exist within the project area. The Public Land Health Standards for wetland or riparian systems are not applicable to this action, since neither the proposed action nor the no-action alternative would have any influence on these. There are also no Native American religious or environmental justice concerns associated with the proposed action.

NON-CRITICAL ELEMENTS

The following elements **must** be addressed due to the involvement of Standards for Public Land Health:

SOILS (includes a finding on Standard 1)

Affected Environment: The soil types in the project area occur from 6,000 to 8,900 feet in elevation. The average annual precipitation in the project area is 14 to 22 inches, the average annual temperature is 37 to 45 degrees F, and the average frost-free period is approximately 80 to 105 days. The proposed well pads and pipelines would occur within 15 soil units mapped by the Soil Conservation Service (SCS, 1982). Soil units found in the project area, their names, and characteristics are listed in the following table.

Summary of Project Area Soil Units

Soil Map Unit	Soil Unit Name	Slope (%)	Ecological Site	Effective Rooting Depth (in)	Runoff	Erosion Potential	Bedrock Depth (in)
1	Abor clay loam	5-30	Clayey Foothills	20-40	Rapid	High	> 20
13	Bulkley channery silty clay loam	5-30	P/J Woodland	20-40	Rapid	Moderate-very high	> 20
15	Castner channery loam	5-30	P/J Woodland	10-20	Medium-rapid	Moderate-very high	> 10
36	Glendive fine sandy loam	2–4	Foothills Swale	≥ 60	Slow	Slight	> 60
42	Irigul channery loam	5-50	Loamy Slopes	10-20	Medium-rapid	Very high	> 10
43	Irigul-Parachute complex	5-30	Mountain Loam	10-20	Medium-rapid	Slight-high	> 10
48	Kobar silty clay loam	3-8	Deep Clay Loam	≥ 60	Medium-rapid	Moderate	> 60
53	Moyerson stony clay loam	15-65	Clayey Slopes	10-20	Rapid	Very high	> 10
58	Parachute loam	25-75	Brushy Loam	20-40	Medium	Very high	> 20
73	Rentsac channery loam	5–50	P/J Woodland	10-20	Rapid	Moderate-very high	10-20
76	Rhone loam	30-75	Brushy Loam	40-60	Medium	Very high	> 40
78	Rock outcrop	50-100	NA	NA	NA	NA	NA
87	Starman-Vandamore complex	5-40	Dry Exposure	10-20	Medium	Moderate-very high	> 10
91	Torriorthents-Rock outcrop complex	15-90	Stony Foothills	10-20	Very rapid	Very high	N/A
96	Veatch channery loam	12-50	Loamy Slopes	20-40	Medium	Moderate-very high	> 20

The majority of soil units have listed salinity values of less than 2 Mmhos per centimeter. Abor clay loam, Kobar silty clay loam, Parachute loam and Rentsac channery loam have listed salinity values of less than 4 and Glendive fine sandy loam has a maximum listed salinity value of 8 Mmhos. Potential slopes in the soil units range widely, from five to 100 percent. Similarly, erosion potential ranges widely, from slight to very high. In most cases, the higher erosion potentials are a function of steeper slopes. Eight of the15 soil units indicate the potential for a fragile soil with listed slope ranges that exceed 35 percent, the criterion that would trigger implementation of a Controlled Surface Use stipulation.

Environmental Consequences of the Proposed Action: Well pad, road and pipeline construction would remove surface cover and disturb soils, potentially increasing soil erosion and reducing soil health and productivity. Actions considered in this analysis and their potential to produce soil disturbance are as follows:

- Construction of the well pads and the compressor station would require an estimated 11.8 acres for drilling surface, reserve pit, cut and fill slopes, access roads and placement of facilities. Assuming the wells are productive, interim reclamation would take place on all but 1.6 acres of the well pads. This 1.6 acres and the compressor station's five acres would remain in a non-vegetated state for the life of the project.
- The pipelines would produce most of the surface disturbance: about 70 acres for the Calamity Ridge trunk line, 28 acres for the Trail Canyon pipeline and another 28.4 acres for the gathering line from the N15 1N100 and L14 1N100 well pads. After construction of the pipelines, 100 percent of the disturbed area would be reclaimed. With successful reclamation, the long-term disturbance would be minimal.
- All the access into the units and to the proposed actions is on existing roads. The roads are in generally good condition and no new soil disturbance for improvement of these roads is anticipated.

The amount of soil disturbance by soil mapping unit is described in the following table. The total area of disturbance over all soil units is an estimated 151 acres, over 92 percent of which would be the result of pipeline construction (55 percent, 70 acres, attributed to the Calamity Ridge trunk pipeline). After successful reclamation, an estimated eight acres (surfaces maintained for long-term production and use at the two well pads and the compressor station) would remain in an unvegetated state for the life of the project (30-40 years) or longer. About three-quarters of the disturbance, an estimated 113 acres would occur on BLM lands.

Initial Soil Disturbance from Proposed Actions (acres) *

Soil Mapping Unit															Total
1	13	15	36	42	43	48	53	58	73	76	78	87	91	96	Area
Well Pads/Compressor															
3.3	0.5					7.8									11.6
Access Roads															
0.3															0.3
Pipelines															
3.1	21.1	3.1	23.0	15.6	28.1	3.2	3.5	0.8	1.4	4.2	0.9	11.0	3.4	4.1	126.5
Total Area															
6.7	21.6	3.1	23.0	15.6	28.1	11.0	3.5	0.8	1.4	4.2	0.9	11.0	3.4	4.1	138.4

* Numbers may not add due to rounding.

The majority (60 percent) of soil disturbance occurs within the following three soil units:

- 30.1 acres in Irigul-Parachute complex soils (43) – 5 to 30 percent slopes, medium to rapid runoff, and very high erosion potential.
- 25.0 acres in Glendive fine sandy loam (36) – 2 to 4 percent slopes, slow runoff, and slight erosion potential.
- 23.6 acres in Bulkley channery silty clay loam (13) – 5 to 30 percent slopes, rapid runoff, and moderate to very high erosion potential.

All disturbances within the Irigul-Parachute complex soils are found on the central ridgeline of the Calamity Ridge trunk pipeline. The slope is generally modest, but can be steep in sections. Erosion potential is rated at moderate to high. Virtually all of the Glendive fine sandy loam disturbance would be a result of constructing the Trail Canyon pipeline. The slope of the route is modest and the erosion potential is slight. Almost all of the Bulkley channery silty clay loam disturbance would be a result of construction of the gathering line for the two proposed well pads. The slope on that pipeline route is relatively steep and the erosion potential is rated high. The soil characteristics indicate the need for implementation of erosion control practices, Best Management Practices, and revegetation. This is most important for disturbance within the Torriorthents-Rock outcrop complex soil unit where erosion potential is greatest and the steepest slopes are encountered. Torriorthents-Rock outcrop complex is found on the north-facing slope of Fletcher Gulch where the proposed trunk pipeline rises out of the gulch up to the ridge on private property. Average slope for this 1000 foot rise is 33 percent.

The very same soil types that would be disturbed by construction of project facilities lie down gradient from the proposed facilities. While much of the disturbance, especially for the Calamity Ridge trunk pipeline, is on relatively modest slopes, the down gradient slopes below the ridgeline are of course steeper and could be subject to increased erosion if water flow from uphill disturbances is not managed properly. Best Management Practices are typically selected and installed not only to control erosion and off-site migration of sediment from disturbed areas but also to avoid erosion in downstream areas. This may be done through use of BMPs such as silt fence which typically does not concentrate runoff water and water diversion berms which are installed on spacing that depends on slope and soil type and are intended to release runoff water from disturbed areas in a controlled manner. BMPs which may collect retain, and release runoff from a central location (i.e. settling pond or culvert) may need downstream erosion protection such as vegetation, rock armoring, or other stabilization materials. The specification, function, inspection, and maintenance BMPs are covered by the storm water management plan and conditions of the storm water discharge permit (see mitigation for Water Quality).

Environmental Consequences of the No Action Alternative: None.

Mitigation: See recommended mitigation for Water Quality regarding a Stormwater Management Plan and standard COAs.

Segregation of topsoil material and replacement of top soil in its respective original position (last out, first in) would assist in the reestablishment of soil health and productivity.

Finding on the Public Land Health Standard for upland soils: Soils within the project area meet the criteria established in the standard for upland soils. With successful reclamation, the proposed action would not change this status.

VEGETATION (includes a finding on Standard 3)

Affected Environment: The Calamity Ridge Pipeline traverses five different plant communities. Most of the route crosses a mountain sagebrush plant community which is a Loamy Slopes

ecological site. Major plant species within the Loamy Slopes site, based upon cover, are mountain sagebrush (25 to 30%), serviceberry (20 to 30%), perennial grasses (30 to 40%), snowberry (5 to 10%) and bitterbrush (5 %). Plant species composition and production of the present plant community on the site has an estimated similarity index of 60 to 75 percent similar to the desired plant community for the Loamy Slopes ecological site.

Approximately 1.5 miles of the route pass through a grassland plant community which is a Dry Exposure ecological site. Major plant species within the Dry Exposure site, based upon cover, are perennial grasses (15 to 20%), perennial forbs (10 to 15%), horsebrush (5 to 10%) snakeweed (2 to 5%), low rabbitbrush (2 to 5%) and mountain sagebrush (0 to 5%). Plant species composition and production of the present plant community on the site has an estimated similarity index of 60 to 65 percent similar to the desired plant community for the Dry Exposure ecological site.

Approximately 1.25 miles of the route pass through a mountain shrub plant community which is a Brushy Loam ecological site. Major plant species within the Brushy Loam site, based upon cover, are serviceberry (40 to 50%), perennial grasses (25 to 30%), oakbrush (10 to 15%), snowberry (10 to 15%) and mountain sagebrush (5 to 10%). Plant species composition and production of the present plant community on the site has an estimated similarity index of 70 to 80 percent similar to the desired plant community for the Brushy Loam ecological site.

Approximately 0.75 miles of the route pass through a basin sagebrush plant community which is a Deep Clay Loam ecological site. Major plant species within the Deep Clay Loam site, based upon cover, are basin sagebrush (25 to 30%), perennial grasses (20 to 25%), rubber rabbitbrush (10 to 15%), snowberry (10 to 15%) and serviceberry (2 to 5%). Plant species composition and production of the present plant community on the site has an estimated similarity index of 50 to 60 percent similar to the desired plant community for the Deep Clay Loam ecological site.

Approximately 0.75 miles of the route pass through a pinyon/juniper woodland plant community. Major plant species within the pinyon/juniper woodland, based upon cover are serviceberry (25 to 30%), mountain mahogany (15 to 20%), pinyon pine (15 to 20%) and perennial grasses (10 to 15%).

The Trail Canyon Pipeline is located for the most part on alluvial valley bottom soils within a basin big sagebrush plant community. The proposed route is located in a Foothill Swale ecological site. Most of the route passes through basin sagebrush with a good understory of native perennial grasses. Sagebrush cover averages 25 percent but some small areas have cover as high as 40 percent. Perennial grass cover varies from 40 to 60 percent. Stands of winterfat and perennial grasses occur in small patches along the route. Stands of perennial grasses and snowberry occur on a burned area for a short distance along the route above the confluence with Mare Canyon. Plant species composition and production of the present plant community on the site has an estimated similarity index of 60 to 70 percent similar to the desired plant community for the Foothill Swale ecological site.

The Compressor Site is located in a basin sagebrush plant community which is a Deep Clay Loam ecological site. Major plant species within the Deep Clay Loam site based upon cover, are

basin sagebrush (25 to 30%), perennial grasses (20 to 25%), rubber rabbitbrush (10 to 15%), snowberry (10 to 15%) and serviceberry (2 to 5%). Plant species composition and production of the present plant community on the site has an estimated similarity index of 50 to 60 percent similar to the desired plant community for the Deep Clay Loam ecological site.

Well pad L14 1N100 (#4412C) is located in a sagebrush plant community in an area where Wyoming sagebrush on valley toe slopes intergrades to basin sagebrush on alluvial soils in the bottom of Fletcher Draw. The well pad is located in a Clayey Slopes ecological site on the slopes and a Deep Clay Loam ecological site of alluvial soils. Both ecological sites consist of native plant species appropriate for the site. The major plant species on both sites are sagebrush, low rabbitbrush, rubber rabbitbrush and western wheatgrass. The current plant community on the Clayey Slopes site has an estimated similarity index of 50 to 60 percent similar to the desired plant community for the site. The current community on the Deep Clay Loam has an estimated similarity index of 40 to 50 percent similar to the desired plant community for the site.

The gathering line for this location comes from location N15 1N100 #4414D and traverses through a pinyon/juniper woodland to location L14 1N100 #4412C. About half of the woodland community traversed by the line has recently burned. The vegetation on the burn is primarily an improving stand of perennial grasses. The vegetation on unburned areas is a fairly young (less than 150 years) stand of pinyon and juniper. The stand is moderately open with an understory of Wyoming sagebrush, serviceberry and perennial grass and forbs.

Well Pad N15 1N100 (#4414D) is located primarily in a grassland plant community with a sagebrush/serviceberry community on the eastern edge and a pinyon/juniper/ serviceberry woodland on the western edge of the location. Part of the grassland on the western side of the location is within a pinyon/juniper woodland that has burned. The location is in a Clayey Foothills ecological site for the most part. Aside from the burned area, the location consists of native plant species consistent with a plant community with an estimated similarity index of 50 to 60 percent similar to the desired plant community for the Clayey Foothills ecological site. The burned area is showing slow improvement since the time the burn occurred but still has a high percentage of cheatgrass occupying most of the burned area.

The access road to the location would pass through undisturbed juniper woodland that occurs on a fairly rocky site. A unique occurrence of native cacti occurs on this rocky site. The fragmented sandstone surface of the site has created ideal habitat for ball cactus (*Pediocactus simpsonii*). As many as 50 plants occur on or near the proposed access road. Most of the suitable juniper woodland habitat for this cactus in this area has burned from wildfires. The burned areas examined in this area are devoid of the cactus. The access road would disturb the best cacti habitat remaining in the area.

Environmental Consequences of the Proposed Action: Approximately 151 acres of disturbance could occur with construction of the facilities proposed (See Table in Soils section). The actions proposed would remove all vegetation from the disturbed areas.

Surface Disturbance by Ecological Site Related to Calamity Ridge Exploration Project (Acres)

Ecological Site	Well Pad L14 1N100	Well Pad N15 1N100	Calamity Ridge Pipeline	Trail Canyon Pipeline	Compressor plant

	Initial	Long-term	Initial	Long-term	Initial	Long-term	Initial	Long-term	Initial	Long-term
Brushy Loam	----	----	----	----	9.0	0	----	----	----	----
Clayey Foothills	----	----	2.8	1.2	----	----	----	----	----	----
Clayey Slopes	2.0	0.75	0.8	0	----	----	----	----	----	----
Deep Clay Loam	1.3	0.55	----	----	5.5	0	----	----	5.0	5.0
Dry Exposure	----	----	----	----	10.9	0	----	----	----	----
Foothill Swale	----	----	----	----	----	----	28.1	0	----	----
Loamy Slopes	----	----	----	----	51.7	0	----	----	----	----
Pinyon/Juniper	3.4	0	25.0	0.1	5.5	0	----	----	----	----
Total	**6.7**	**1.3**	**28.4**	**1.3**	**82.6**	**0**	**28.1**	**0**	**5.0**	**5.0**

Approximately 140 acres of the disturbance associated with construction of the proposed facilities would remain non-vegetated for only a short period of time, if successfully re-vegetated. Approximately 7.7 acres would remain non-vegetated for a considerable length of time depending upon the useful life of the proposed facilities. Over 90 percent of the original disturbance would be returned to production of desirable vegetation within three to five years

Disturbances associated with the proposal would be subject to an invasion of very competitive weedy plants, some native some not. Invasion of these weedy species can create problems in future reclamation efforts. It usually takes a couple of growing seasons for these species to develop sufficient seed for dominance of the disturbance. The longer the disturbance remains non-vegetated, the greater the chance for invasion of these weedy plants onto the site. Once the disturbance becomes dominated by weedy species, reclamation with desirable native perennial species becomes very difficult. What should be a short term impact could become a long term invasion of weedy species which usually requires additional resources and strategies to control the unwanted vegetation before successful reclamation can be achieved.

Shrub species and pinyon/juniper removed at disturbed sites would be a long-term loss. Sagebrush is expected to begin re-establishment on disturbed areas following reclamation within 10 years. Pre-disturbance levels would be achieved within 20 to 25 years. Deciduous shrub species (serviceberry, oakbrush, bitterbrush, and mountain mahogany) are expected to take 15 to 20 years before re-establishing on disturbed areas and 40 to 50+ years to achieve pre-disturbance levels. It is likely to take at least 40 to 50 years for pinyon or juniper trees to begin showing up on the disturbed sites and over 100 years before achieving pre-disturbance levels.

Well Pad N15 1N100 (#4414D): The access road to this location would destroy a majority of the ball cactus (*Pediocactus simpsonii*) plants at this location. The access road would disturb the best cacti habitat remaining in the area. The species is fairly widespread; however, number of individuals is naturally low. The number of individuals at this location is unique for the species. No protective measures for this species are specifically required; however, avoidance of this unique occurrence is possible at this location. The population is concentrated in a small area that could be avoided by relocating the access road/pipeline to avoid the population.

Environmental Consequences of the No Action Alternative: None.

Mitigation: All disturbed areas for the pipelines and well pads with the exception of the access road travel surface and the area around well pad production facilities would be reclaimed within the first growing season or prior to the first full growing season following disturbance with the following seed mix:

Recommended Calamity Ridge Seed Mix

Species	Variety (cultivar)	Seeding Rate (PLS*/Ac)
Grasses		
Slender Wheatgrass	San Luis	2.0 lbs
Beardless Bluebunch Wheatgrass	Whitmar	2.0 lbs
Thickspike Wheatgrass	Critana	1.0 lbs
Indian Ricegrass	Rimrock	2.0 lbs
Western Wheatgrass	Rosanna	2.0 lbs
Forbs		
Utah Sweetvetch		1.0 lbs
Scarlet Globemallow		0.5 lbs
Alfalfa	Travois, inoculated	1.0 lbs
Shrubs		
Antelope Bitterbrush		1.0 lbs
*Pure Live Seed		Total 11.5 lbs/pls/ac

Successful re-vegetation should be achieved within three years. The operator will be required to monitor the project site(s) for a minimum of three years post construction to detect the presence of noxious/invasive species. Any such species that occur will be eradicated using materials and methods approved in advance by the Authorized Officer.

Areas of the two well pads not used during any production phase, including cut and fill slopes, would be contoured to a slope of about 5:1, and would have topsoil redistributed and re-vegetated with the Seed Mixture noted above prior to the first full growing season following completion of drilling.

Final reclamation of roads and well pads following abandonment would be achieved with the predominantly native seed mix noted above. Forb seed should be broadcast separately from grass seed and lightly dragged.

Ball Cactus Mitigation (well pad N15 1N100): The access road/pipeline to this location will be relocated to avoid the small ball cactus (*Pediocactus simpsonii*) population. Relocating the route onramp from County Road 122 farther west and routing the road farther south to enter the pad near the southwest corner of the pad would avoid the population. Alternately, relocating the road onramp off County Road 122 to the east closer to the pad and entering the pad near the northwest corner would also avoid the population. BLM will flag the area to be avoided.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial): The plant communities within the area of the proposed action have an appropriate structure and diversity of species which meet the criteria

established in the standard for vegetation. With successful reclamation, the proposed action would not change this status.

WILDLIFE, AQUATIC (includes a finding on Standard 3)

Affected Environment: There is no aquatic wildlife within the project area.

Environmental Consequences of the Proposed Action: None.

Environmental Consequences of the No Action Alternative: None.

Mitigation: None.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Aquatic): As there is no aquatic wildlife within the project area, the standard is not applicable.

WILDLIFE, TERRESTRIAL (includes a finding on Standard 3)

Affected Environment: The project area includes the Fletcher Gulch, Calamity Ridge and Trail Canyon portions of the northern Cathedral Bluffs area. Elevation varies from 6470 feet at the junction of Trail Canyon and Little Duck Creek to 8260 feet on Calamity Ridge near the head of Little Duck Creek. The top of Calamity Ridge is moderately flat, with major drainages (Spring Creek and Little Duck Creek) to the west and east respectively, with many smaller side draws. The major drainage bottoms are typically covered with basin big sagebrush. The flatter ridges are a mosaic of sagebrush flats and pinyon/juniper woodlands. The top of Calamity Ridge is vegetated with mountain shrub with pinyon trees interspersed on south-facing slopes and some scattered Douglas-fir and aspen found at the higher, southern portion of the ridge.

Vegetation in the lower portion of Fletcher Gulch is composed primarily of pinyon/juniper woodlands; as the proposed pipeline climbs out of the gulch and up to Calamity Ridge, it passes through dense pinyon and into dense mountain shrub on top of the ridge. The bottom of Trail Canyon is primarily vegetated with basin big sagebrush with some greasewood in the lower reaches.

This area is primarily public land; the proposed pipelines cross private parcels in Fletcher Gulch, Trail Canyon and the Duck Creeks.

The entire project area is within deer overall range and elk winter range. An abundance of tracks and droppings were observed in Fletcher Gulch and in the saddle near well location N15 1N100. About 30 deer were observed on November 2, 2005 in the upper reaches of Fletcher Gulch, and deer were seen crossing CR 122 on every trip just north of well location N15 1N100. The top of Calamity Ridge is heavily used by deer and extensively hunted during the big game seasons.

Lower Trail Canyon is in deer and elk winter range; this area is not considered critical or severe winter range.

The only suitable cliff habitat for raptor nesting occurs in Trail Canyon. The mature pinyon/juniper woodlands in Fletcher Gulch and in Trail Canyon provide nesting habitat for accipiters (Cooper's and sharp-shinned hawks), owls and red-tailed hawks. These sites were surveyed in November, 2005 to determine if any nests were present.

Calamity Ridge pipeline: The north end of the proposed pipeline travels through a short section of big sagebrush, up a steep hillside dominated by mature pinyon with a few mature juniper trees, and then travels to and along Calamity Ridge in dense mountain shrub habitat. For the majority of its length, the pipeline parallels RBC Road 103. Near the southern end of the route as elevation increases, small stands of aspen and scattered Douglas-fir are found on north-facing slopes. These tree stands were searched for raptor nests on November 4 and 11, 2005 but no nests were observed.

Trail Canyon pipeline: The proposed route parallels RBC Road 24X through basin big sagebrush for most of its length and then scattered pinyon/juniper at the lower end. Several cliff formations occur on the north side of the county road and these were searched for raptor nests on November 11, 2005. One stick nest was found at 12S 716073mE 4429863mN on a 50 foot high cliff. The size of the nest indicates it was probably built by a red-tailed hawk. A small amount of whitewash was visible in the vicinity of the nest but it is impossible to say if the nest was used in 2005.

WestWater biologists were only able to identify nest sites during this survey; the raptor nesting season had concluded and young of the year had fledged by the time the inventory was initiated. WestWater biologists assigned nest sites to specific raptor species based on nest size, configuration, nesting materials and habitat. It should be recognized that these are "best estimates" and should not be considered confirmed species observations.

In this portion of Colorado, the raptor nesting season is generally considered to occur between mid-February and mid-August. Typically, owls and eagles are the first raptors to begin the nesting cycle followed by members of the Genus Accipiter, Buteo, Circus and Falco. Breeding pairs initially establish nest territories and usually by mid-August all young birds have fledged and left the nest.

Well Site L14 1N100: The well site is located at an old well pad in Fletcher Gulch. Sagebrush and interspersed juniper trees surround the grassy area of the old well pad. Suitable mature pinyon/juniper woodlands along the access road and in the vicinity of the well location were surveyed for raptor nests on November 2, 2005. Nine stick nests at seven locations within ¼ mile of the proposed well location or access road were discovered. The table below provides specific information about each location, including an estimate as to which species built/used the nest, whether it was judged to be active in 2005, the height of the nest above ground and the UTM coordinates (all coordinates in 12T, NAD 83). All nests were in live juniper trees. Location number 6 is a cluster of 3 nests in separate juniper trees that average 12 feet off the ground.

Location	Species	Height	Nest Status	Easting	Northing
1	Unknown accipiter (?)	15 feet	Unknown, adjacent to existing road	704770	4436757
2	Black-billed magpie	20 feet	Inactive	704999	4436964
3	Black-billed magpie	8 feet	Inactive	705124	4436872
4	Black-billed magpie	22 feet	Active	705294	4436900
5	Black-billed magpie	15 feet	Past reuse possible	705419	4436858
6	Black-billed magpie	12 feet	dilapidated	705503	4436766
7	Black-billed magpie	20 feet	Past reuse possible	705726	4436522

Well Site N151N100: The well site is located in a saddle on the ridge between Fletcher Gulch and the East Fork of Spring Creek, adjacent to RBC Road 122. Open sagebrush with scattered juniper is found east of the well site and a stand of mature juniper to the west. Many trees to the south were killed by a fire several years ago. A raptor nest survey was conducted November 2, 2005 in the live mature trees within ¼ mile of the well location but no evidence of raptor nesting was noted.

Gathering pipeline between well locations L14 1N100 and N15 1N100: The gathering pipeline will travel along RBC Road 122 and along the existing access road into Fletcher Gulch through juniper-dominated woodlands. Suitable mature trees along the proposed route were searched for evidence of raptor nests on November 2, 2005. The stick nests described in the section on well site L14 1N100 above apply to this proposed pipeline as well. One nest is particularly close (within 30 feet) to the existing access road (location #1: 12T 704770mE 4436757mN) and would likely be removed during pipeline construction. Because this road was in place prior to the early 1960's, there is strong suspicion that original nest construction is attributable to magpie, although there are indications that this site was reoccupied by a nesting woodland raptor. Since recent road upgrading, this nest site probably retains no residual utility for subsequent raptor nesting.

Environmental Consequences of the Proposed Action: The construction of two well pads, the gathering pipeline between them and the construction of two additional pipeline segments would remove vegetation from an estimated 151 acres of elk and deer habitat. Subsequent reclamation would fully compensate the temporary loss of grass-like forms of herbaceous forage in the short term. Although the availability of woody forage would be reduced in the longer term, it is unlikely that mature plants in close proximity to this county road provided a substantive source of woody forage for big game. The reclamation seeding mixture for the two well sites, the gathering pipeline between them, and the pipeline down Calamity Ridge has been modified to include additional forbs and a shrub species (e.g., Travois alfalfa, antelope bitterbrush). Because forbs and woody deciduous forms are a prominent source of nutrition during the period of use, enhancing the availability of favored forages would help offset the longer term detriments of road use and vegetation clearing attributable to the project. Construction activity along with drilling and well maintenance will subject deer and elk to increased disturbance. This will be most significant during the late fall through early winter and spring months.

Cleared right-of-ways often support unauthorized vehicle use once reclamation is complete. Increasing road density aggravates the intensity and extent of big game issues involving

avoidance (e.g., inefficient use of forage and cover resources) and harassment (e.g., increased energetic costs). The proponent will be responsible for employing the means to effectively deter subsequent vehicular travel (including ATVs) on those portions of the right-of-way that deviate from positions immediately adjacent to existing roads through the life of the project. This objective is particularly pertinent to the pipeline route on Public Land between Fletcher Gulch and RBC 122 (T1N R100W section 24 S1/2).

Construction of the gathering pipeline to well location L14 1N100 would take place in close proximity to a potential raptor nest site (#1) located within 30 feet of the existing access road. However, at the present time, due to the proximity of the road and the use it will bear (i.e., private wells in Fletcher Gulch), it is improbable that this site would attract or sustain a viable nesting effort. The COA routing the pipeline to the south of the existing road within 300 feet of the site would maintain a small parcel of mature junipers as suitable nest substrate in the future.

Construction and drilling at proposed well L14 1N100 could disturb raptor nesting use of 1 to 2 potential raptor nest sites located within ¼ mile of the pad location. Well installation (existing abandoned pad location) would have no effective influence on the character or long-term utility of adjacent woodlands for subsequent nesting functions. In the event well development activities (i.e., well drilling and completion, pipeline installation) cannot be finalized prior to 15 April 2006, activities associated with this well should be deferred until after 15 May 2006, when follow-up surveys would be capable of accurately evaluating nest activity and possible applications of exceptions or modifications to the proposed raptor nest restriction.

Construction of the pipeline down Trail Canyon could, depending on timeframes, also disturb red-tailed hawk nesting activity on a cliff site within ¼ mile of the proposed route. This nest is likely situated in a location that is sufficiently secure (i.e., lateral and elevational separation, acclimatization) from pipeline-related disturbance to allow a stipulation exception. However, subsequent survey to determine nest status would provide an opportunity to monitor bird response and nest outcome in the face of these potential disruptions.

Environmental Consequences of the No Action Alternative: No additional disturbance associated with commercial gas development, or additional modification of elk and deer habitat would occur at this time and place. No raptor nesting habitat would be removed and woodland habitat adjacent to access corridors, well pads and pipeline routes would not be subject to increased levels of human disturbance.

Mitigation: The gathering pipeline between the two proposed well pads in Fletcher Gulch will be routed on the uphill (south) side of the access road within 300 feet of nest site #1 (at 12 T 704770mE 4436757mN). Site construction and well drilling at location L14 1N100 will be restricted to the period outside an April 15 to August 1 window or until it has been determined that the raptor nests within ¼ mile of the well are not occupied or the young have fledged.

The proponent will be responsible for employing the means to effectively deter subsequent vehicular travel (including ATVs) on those portions of the right-of-way that deviate from positions immediately adjacent to existing roads through the life of the project. This objective is

particularly pertinent to the pipeline route on Public Land between Fletcher Gulch and RBC 122 (T1N R100W section 24 S1/2).

In the event surface disturbances (e.g., pad or pipeline installation within 0.25 mile) or well development activity (e.g., drilling, completion) associated with the L14 1N100 pad would coincide with the raptor nest season (between 15 April and 1 August), activity would be deferred until after 15 May and the nest sites documented in the WestWater Biological Report shall be resurveyed to determine occupancy status.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Terrestrial): This project, as mitigated, would not jeopardize the viability of any animal population. It would have no significant consequences on terrestrial habitat condition, utility, or function, nor have any discernible effect on animal abundance or distribution at any landscape scale. The public land health standard would thus be met.

OTHER NON-CRITICAL ELEMENTS: For the following elements, only those checked in the last column will be addressed further in this EA.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Access and Transportation			X
Cadastral Survey	X		
Fire Management	X		
Forest Management			X
Geology and Minerals			X
Hydrology/Water Rights	X		
Law Enforcement		X	
Noise			X
Paleontology			X
Rangeland Management			X
Realty Authorizations			X
Recreation			X
Socio-Economics			X
Visual Resources			X
Wild Horses			X

ACCESS AND TRANSPORTATION

Affected Environment: Access to the project area is along RBC Road 122 south from Colorado Highway 64 or along CR 24 and 24X north from Piceance Creek. All access for the proposed actions would be on existing roads so no new roads would be constructed. Well pad N15 1N100 would be located immediately adjacent to RBC Road 122. Well pad L14 1N100

would be located just off RBC Road 122 on a road that was used for access to the two previously developed well pads in Fletcher Gulch. The Calamity Ridge pipeline would parallel RBC Road 103 for much of its length and would cross it four times. The Trail Canyon pipeline would parallel RBC Road 24X and would cross it once. The road to well pad L14 1N100 would be rerouted slightly and then would cross the east part of the well pad. Well pad N15 1N100 would be located where a BLM two-track leaves RBC Road 122 and would require the rerouting of that route. The new route would leave RBC Road 122 where the well pad access road leaves the county road and would then be routed around the well pad. No changes or improvements of any county roads are anticipated as part of this project. The Calamity Ridge pipeline would create new potential roadways near the top of Calamity Ridge where it parallels a two-track road and on the southern end of the pipeline where the ROW could become a new route.

The route north out of the Piceance Basin to Rangely along RBC Road 24X and RBC Road 122 to CO 64 is a well used route for vehicles associated with oil and gas development in RBC. Traffic along RBC Road 103 is low most of the year, peaking during hunting season.

The entire proposed action is within an area where motorized vehicle traffic is limited to existing roads from October 1 to April 30 each year. Cross-country motorized vehicle travel is allowed from May 1 to September 30 as long as no resource damage occurs as a result.

Environmental Consequences of the Proposed Action: No traffic routes would be created or changed by the proposed actions. The proposed actions would increase traffic along RBC Road 122 and RBC Road 24X marginally with occasional short periods of heavy use as certain drilling activities (e.g., fracing) or construction activities (e.g. pipelines) peaked. More importantly, traffic flow along the county roads may be momentarily disrupted as well pad or pipeline construction activities require temporary closures or re-routes.

The construction of the Calamity Ridge and Trail Canyon pipelines would not create new access routes for ATVs or four-wheel drive vehicles since the routes parallel existing county roads or other established roads for most of their length.

Environmental Consequences of the No Action Alternative: None.

Mitigation: Implement road construction and maintenance standards and procedures described in the APD's 13 Point Surface Use Plan.

The applicant is required to assure that public traffic on county roads would not be obstructed by construction of the project. Traffic delays for movement of construction equipment would be brief.

FOREST MANAGEMENT

Affected Environment: The N151N100 well pad is located in a middle aged stand of pinyon juniper. The pipeline between the N151N100 and L14N100 well will cross approximately 1.24 miles of pinyon/juniper woodland. These woodlands are considered

commercial based on quality production and accessibility. Within the White River Resource Management Plan a limit of 25 acres per year for clear-cutting of woodlands is permitted. These stands are also used by the local population as a source of firewood and fence posts, and are authorized under personal use permits. The Calamity Ridge and Trail Canyon pipelines would only encounter occasional pinyon and juniper.

Environmental Consequences of the Proposed Action: Under the proposed action 12.6 acres of woodland would be removed. The estimated volume of material removed is estimated at 151.2 cords. The removal of woodland resources is within that established within the land use plan. Following reclamation pinions and junipers are expected to reoccupy the site and develop into a mature woodland. Establishment is expected to take up to 30 years while a mature woodland would develop in 250+ years. With the mitigation listed below there would not be problems with disease/insects or vehicle use along the pipeline.

Environmental Consequences of the No Action Alternative: There would be no impacts.

Mitigation: From the White River Resource Management Plan of 1997, Appendix B, Number 7. All trees removed in the process of construction shall be purchased from the Bureau of Land Management. The trees shall be cut with a maximum stump height of six inches, cut into four-foot lengths, down to four inches in diameter and placed along the edge of the disturbance. Root balls will be placed on the right-of-way following seeding to prevent vehicle access of the right-of-way.

GEOLOGY AND MINERALS

Affected Environment: The surficial geology in the project area is the shallow dipping Tertiary Uinta Formation within the Green River Formation (Tweto, 1979). The Green River Formation is comprised of organic-rich shaley limestone, shale, marlstone, and sandstone, and is rich in fish, insect and plant fossils. The Green River Formation contains very substantial amounts of "oil shale" which is actually a kerogen-rich marlstone (Foutz, 1994). Other mineral resources in the project area include gas, coal, and nahcolite. EnCana's targeted zone in all the wells is in the Mesaverde. During drilling, potential water, oil shale, coal, oil and gas zones would be encountered from the surface to the targeted zone. This area is identified in the ROD/RMP as available for underground oil shale leasing and development.

Environmental Consequences of the Proposed Action: The cementing procedure of the proposed actions isolates the formations and, if properly done, would prevent the migration of gas, water, and oil between formations. The coal zones located in the Mesaverde would also be isolated during this procedure. These zones are at a depth greater than 3,000 feet and the coal is not recoverable by conventional methods. Development of these wells would deplete the hydrocarbon resources in the targeted formation. Depending on the number of additional wells, future development of underground mining of the oil shale in and around existing wells may be limited.

Environmental Consequences of the No Action Alternative: None.

Mitigation: None.

NOISE

Affected Environment: Traffic on the county roads is generally the only source of man-made noise in the project area. Those people potentially subject to noise generated in the project area are ranchers, recreationists, especially during hunting season, and increasingly employees of the oil and gas companies. No residences are located in the project area.

Environmental Consequences of the Proposed Action: Well pad construction and well drilling would generate noise for two to four months at each site. The COGCC has established a noise limit of 55 decibels (dBA) as the limit for oil and gas facilities in residential areas. (This can be compared to average highway noise of 60 dBA at 100 feet.) The 55 dBA limit would be reached at 1,500 feet from a well pad construction site and at 800 feet from and operating drill rig, although the rig would be operating 24 hours a day for the period of drilling. Local wind and terrain effects could cause that distance to vary considerably in different parts of the project area and at different times.

When the compressor station begins operation, it would generate noise round the clock for the life of the facility. The level of noise produced would depend on the number and size of compressor engines used and the muffling technology employed. Assuming a two-engine compressor station was in operation, the 55 dBA level would be produced at a distance of 200 feet. The night-time COGCC limit (50 dBA) would be produced at 340 feet. Local wind and terrain effects could cause that distance to vary considerably in different parts of the project area and at different times. Since no residences are in the project area, the impact would be minimal.

Environmental Consequences of the No Action Alternative: None

Mitigation: None.

PALEONTOLOGY

Affected Environment: The proposed well pads and associated road and pipeline construction all are located in an area mapped as the Uinta Formation (Tweto 1979). BLM has classified the Uinta as a Condition I formation, meaning that it is a known producer of scientifically significant fossils.

Environmental Consequences of the Proposed Action: Since the actions proposed in the project area would all occur within the Uinta formation, there is potential for impacting fossil resources if it is necessary to excavate into the underlying bedrock formation to construct the well pads, including the reserve/blooie pit, to construct or upgrade the access roads, or to install the pipelines.

Environmental Consequences of the No Action Alternative: None

Mitigation: All exposed rock outcrops in the project area shall be examined by an approved paleontologist with a report detailing the results of the inventory and any mitigation recommendation shall be submitted to the BLM prior to the initiation of construction on any of the well pads or associated roads and pipelines. A monitor shall be present at any time that it becomes necessary to excavate into the underlying bedrock formation in order to bury pipelines, level well pads or excavate reserve/blooie pits, or to construct any project features.

1. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing paleontological sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear to be of noteworthy scientific interest
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible)

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

RANGELAND MANAGEMENT

Affected Environment: Four grazing allotments would be affected by the proposed action. The following table shows which grazing allotment would be affected by each component of the proposed action. All four allotments are grazed by cattle.

Grazing Allotments Affected by the Calamity Ridge Exploration Project

Proposed Facility	Grazing Allotment Affected	Allotment	Disturbance
		Acres	
Well pad L14 1N100	Upper Fletcher #06040	6,250.	28.6.
Well Pad N15 1N100	E. Fork Spring Creek #06033	2,927.	2.3.
	Upper Fletcher # 06040	6,250.	4.4.
Trail Canyon Pipeline	Duck Creek #06031	21,802	28.1
Calamity Ridge Pipeline	Spring Creek #06032	32,905	9.7
	Duck Creek #06031	21,802.	63.9.
	Upper Fletcher #06040	6,250.	9.0.
Compressor Site	Upper Fletcher #06040	6,250.	5.0.

Trail Canyon Pipeline would come very close to a water well on the Duck Creek allotment. The well is located at the confluence of Mare Canyon with Trail Canyon in the NE ¼ of Section 33, T1N, R99W.

Calamity Ridge Pipeline would parallel an allotment boundary fence between the Spring Creek and Duck Creek allotments for ½ mile before crossing the fence. A pasture fence on the Duck Creek allotment would be crossed by the pipeline. Both fences are authorized by cooperative agreements which require grazing permit holders to maintain the fence in a functional condition.

Rangeland Improvements Affected: Well Pad N15 1N100 (#4414D) would impact an allotment boundary fence and a livestock-handling corral. The boundary fence is authorized by cooperative agreement which requires grazing permit holders from both allotments to maintain the fence in a functional condition. The corral is authorized by a range improvement permit issued to the grazing permit holder of the East Fork Spring Creek allotment. The range improvement permit authorizes use and maintenance of the corral and recognizes the permit holder's ownership of materials used in construction and maintenance of the corral. Construction of the well pad would require that both improvements be removed and relocated.

Environmental Consequences of the Proposed Action: Surface disturbing activities proposed would remove forage from a total of 151 acres. Approximately 19 animal unit months (AUM) of forage for livestock from four grazing allotments would be lost in the short-term. Approximately 1.5 AUMs of that would result in a long-term loss from two of those allotments.

Anticipated Forage Loss by Grazing Allotment Affected

Grazing Allotment Affected	Acres of Disturbance		Forage Loss (AUMs)	
	Initial	Long-term	Initial	Long-term
Upper Fletcher #06040	42.0 Ac.	6.3 Ac.	5.5	1.5
E. Fork Spring Creek #06033	2.3 Ac.	1.4 Ac.	0.3	0.15
Spring Creek #06032	21.6 Ac.	0 Ac.	2.5	0
Duck Creek #06031	85.1 Ac.	0 Ac.	12.0	0
Total	151.0 Ac.	7.7 Ac.	18.8	1.65

Most of this loss would be only short term until successful reclamation of disturbed areas had occurred. On areas that are disturbed and rehabilitated, herbaceous vegetation and herbaceous forage production typically recovers to the level before disturbance in three years. Rehabilitated sites often produce more livestock forage than native rangeland. There would be some long-term loss of vegetation from well pads and the compressor plant that would continue for the life of the project.

The amount of short-term forage loss from each allotment is small in comparison to forage available on each allotment. These allotments have sufficient capacity to absorb the short-term forage loss expected. No changes in livestock grazing levels are necessary to account for the short-term forage lost.

Most of the long-term forage loss would occur on one allotment. The amount of loss is minimal and would not require adjustment in livestock grazing levels.

There could be some annoyance impact to cattle from construction and drilling activities and associated traffic, especially if this activity coincides with grazing use near the locations.

Physical harm to livestock could occur from proposed actions such as traffic accidents, open pits or trenches or consumption of contaminated water or forage. Any livestock losses from operations conducted by the applicant would require a negotiated settlement between the applicant and the livestock owner.

Rangeland Improvements:

Well Pad N15 1N100 (#4414D) would impact an allotment boundary fence and a livestock-handling corral. The boundary fence is authorized by cooperative agreement which requires grazing permit holders from both allotments to maintain the fence in a functional condition. The corral is authorized by a range improvement permit issued to the grazing permit holder of the East Fork Spring Creek allotment. The range improvement permit authorizes use and maintenance of the corral and recognizes the permit holder's ownership of materials used in construction and maintenance of the corral. Construction of the well pad would require that both improvements be removed and relocated. Relocation of the boundary fence shall be decided and an agreement finalized between the BLM, involved permittees, and EnCana and relocation and construction of the new fence shall occur prior to any construction of well pad N15.

Well Pad N15 1N100 (#4414D): Construction of the well pad would destroy about ¼ mile of an allotment boundary fence and the livestock corral at the site. The grazing permit holder has authorization to construct, use and maintain the corral at its current location and he owns the materials used in construction of the corral. Without mitigation, BLM would not be able to issue an authorization for the proposed well pad until ample notice and due process are provided to the grazing permit holder to remove the corral from this location.

Environmental Consequences of the No Action Alternative: None

Mitigation: Calamity Ridge Pipeline: Construction of the pipeline would involve crossing two livestock fences. The applicant will be required to maintain a functional temporary fence at all times at each crossing and at any point the pipeline would parallel a fence. Upon completion of the pipeline, the applicant will be required to construct or rebuild a permanent fence to BLM specifications at any location where a fence is affected by the project.

Well Pad N15 1N100 (#4414D): The applicant shall be required to relocate the boundary fence to the south of the well pad and to construct the new fence in accordance with BLM specifications.

The applicant shall meet with the permittee and a BLM representative to discuss and decide on a new location/construction of the corral and chute. A map will be provided showing the location of the new facility. Also, a signed agreement from the permittee needs to be submitted to BLM, stating that the permittee is satisfied with the location/construction of the range improvement facilities. The applicant will be required to relocate the corral to the agreed location.

If no agreement can be reached, BLM will be required to issue the grazing permit holder a decision to remove the facility. The decision will have to provide ample time for removal, as well as, the right to protest and appeal the decision.

REALTY AUTHORIZATIONS

Affected Environment: The main access routes for activities within the Calamity Ridge Unit would be along RBC Road 122 south from Colorado Highway 64 or along RBC Road 24 and RBC Road 24X north from Piceance Creek. No use or change of those roads is anticipated by the applicant as part of the Calamity Ridge exploration project. The applicant plans to transport gas out of the unit in a trunk pipeline that travels along Calamity Ridge. Gas produced by the applicant at the O28 1N99 well pad in Trail Canyon (see CO-110-2005-206 EA) would be carried in a pipeline down the canyon to an existing line in Big Duck Creek.

Environmental Consequences of the Proposed Action: The applicant has submitted an application for the pipeline on Calamity Ridge and the Trail Canyon pipeline for the 028 1N99 well. This action has been serialized as COC69322. The ROW would have a permanent width of 30 feet (with an extra 30 foot width for work space) reverting back to the permanent 30 foot width ROW after construction and reclamation. The ROW length will be 61,293 feet encompassing 42.21 acres. The Trail Canyon pipeline would hook-up the 028 1N99 well, with the pipeline crossing unit boundaries in order to connect into an existing pipeline; it will require a ROW authorization and will be included in ROW COC39322. The term of the right-of-way would be 30 years ending December 31, 2035. The compressor station included in the project is located on private land and no Federal authorization is necessary. No right-of-way applications would be required for the road use since changes, improvements or maintenance to county roads across public lands is anticipated.

Trail Canyon:
Private 4,300 ft
BLM 15,927 ft
20,227 ft x 60 ft ÷ 43,560 = 27.86 ac

Calamity Ridge:
Private 5,500 ft
BLM 45,366 ft
50,866 ft x 60 ft ÷ 43,560 = 70.06 ac

BLM Permanent ROW:
Calamity Ridge: 45,366 x 30 ÷ 43,560 = 31.27 ac
Trail Canyon: 15,927 x 30 ÷ 43,560 = 10.97 ac

Environmental Consequences of the No Action Alternative: None.

Mitigation: The Conditions of Approval for the proposed wells would be made a part of the right-of-way grant stipulations plus any standard stipulations from the BLM right-of-way manual that applies. The extra work width of 30 feet would be reclaimed and recontoured immediately after construction has been completed and weather permits.

A "Notice to Proceed" stipulation would be included in the right-of-way grant for the pipelines, indicating that construction of the pipelines would only be permitted to begin when the wells are approved, constructed and producing.

RECREATION

Affected Environment: The proposed actions would occur within the White River Extensive Recreation Management Area (ERMA). BLM custodially manages the ERMA to provide for unstructured recreation activities such as hunting, dispersed camping, hiking, horseback riding, wildlife viewing and off-highway vehicle use.

The Calamity Ridge project area most closely resembles a Recreation Opportunity Spectrum (ROS) class of Semi-Primitive Motorized (SPM). A natural appearing environment with few administrative controls typically characterizes an SPM recreation setting; there is low interaction between users but evidence of other users may be present. An SPM recreation experience is characterized by a high probability of isolation from the sights and sounds of humans that offers an environment with challenge and risk.

Throughout most of the year, recreation use is low. During the fall hunting seasons, use is high as the area is a well known big-game hunting area and there is extensive public access to the BLM lands in the area.

Environmental Consequences of the Proposed Action: The public would lose approximately four acres of dispersed recreation potential during the life of the project (30-40 years) because of well pad construction. The public would be less likely to recreate in the vicinity of these facilities and would be dispersed elsewhere. If drilling, well pad construction or pipeline construction coincides with hunting seasons (September through November), it would most likely disrupt the experience sought by those recreationists.

Traffic along RBC Road 122 appears to be increasing, as oil and gas development in the Piceance Basin grows. Development of the natural gas production facilities in the Calamity Ridge project area would add to the traffic level. The relatively high levels of traffic increase the likelihood of human interactions and the sights and sounds associated with the human environment. Eventually, the construction of the two proposed well pads and the compressor station, together with the greater volume of traffic on the county road would diminish the sense of isolation and change the nature of the recreation experience.

Environmental Consequences of the No Action Alternative: None.

Mitigation: None.

SOCIOECONOMICS

Affected Environment: The proposed actions within the project area would be developed in RBC but construction and drilling resources would also be drawn from Garfield County (GC) and Mesa County (MC). RBC had an estimated 2003 population of 6,033, almost unchanged from the 1990 level of 6,051. The major communities in the county are Meeker (2,263 population in 2003) and Rangely (2,088). The county underwent a substantial economic and demographic growth in the late 1970's and early 1980's when major energy companies attempted to develop oil shale as a national energy fuel source. After a decline in jobs and population from the boom levels, the number of jobs and people in the county has remained static. Currently, the government sector makes up almost a third of all jobs in the county. The traditional farming and ranching sector has been supplemented in the last few years by a growing number of jobs in the oil and gas extraction industry as drilling activity has expanded.

Many of the labor and physical resources required for development of the oil and gas resource in the last few years have come out of GC or MC and located in RBC on only a temporary basis. Most recently (fall 2005), several hundred workers have located in the Meeker area on a temporary basis while working on the construction of two natural gas transmission lines that pass through RBC.

Within the Calamity Ridge project area, livestock grazing is the only other economic activity that currently takes place other than natural gas exploration and development.

Environmental Consequences of the Proposed Action: The employment required for construction of the facilities in the Calamity Ridge project and for drilling of the proposed wells would for the most part not be new employment but workers already available in the RBC area. Some may very well reside in other western Colorado counties or in eastern Utah. Motels, restaurants, grocery stores, gas stations, vehicle and equipment repair shops could all experience some additional activity. The facilities developed by the proposed actions would expand the local property tax base and the gas produced by the proposed wells would generate increased federal royalties. Half of those royalties would be returned to the State of Colorado and to jurisdictions within Colorado, including RBC. The net effect of these impacts would be considered beneficial but low.

Environmental Consequences of the No Action Alternative: None.

Mitigation: None.

VISUAL RESOURCES

Affected Environment: Most of the Calamity Ridge pipeline route would be located on public lands that have received a BLM Visual Resource Management (VRM) Class II designation. The L14 1N100 well pad and part of the pipeline to the N15 1N100 well pad are also in an area designated VRM II. The Trail Canyon pipeline and the N15 1N100 well pad and most of its gathering pipeline are on public lands that have received a VRM III designation. The proposed compressor station would be built on lands that are privately owned and as such have

not received a VRM designation. Had they been classified, they would have probably received a VRM Class II designation.

The management goal for VRM Class II is to retain the existing character of the landscape. The change brought about by activities on lands with VRM II designation must blend in with the natural landscape. The visual contrast must be low and not attract attention. The management goal for VRM Class III is to partially retain the existing character of the landscape. The change brought about by activities on lands with VRM III designation may be evident. The visual contrast may be moderate but should not dominate the natural landscape character. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Visual sensitivity in the area is low because use is low and because no special management areas or other uses rely on the area's visual quality. Distance, elevation and intervening terrain shield the area from the most highly traveled route in the area, Colorado Highway 64 from Rangely to Meeker. Local ranchers, a growing number of oil and gas company employees and contractors, and a few recreationists during hunting season make up most of the potential viewing public.

Environmental Consequences of the Proposed Action: The proposed well pads, trunk pipeline and compressor station, and the Trail Canyon pipeline would alter the landscape character. Removal of vegetation and recontouring of the natural surface during construction would introduce linear features into the landscape and offer contrasting soil and vegetation colors and patterns that had not previously been there. This change would lessen in the long-term as exposed areas were reclaimed and bare soil was not so extensively evident. Additionally, above-ground natural gas production facilities such as well heads, metering sheds, condensate tanks, and compressor facilities would introduce man-made industrial facilities that would draw attention due to their size, color and shape. The use of natural paint tones would reduce the visual impact of the facilities.

The proposed N15 1N100 well pad and the pipeline along RBC Road 24X in Trail Canyon are within a VRM III area. The N15 1N100 well pad is located directly adjacent to RBC Road 122, the Spring Creek Road, and would tend to dominate the immediate foreground view of those traveling on the road in that area. The Trail Canyon pipeline would likewise be apparent in the foreground. Neither would be visible from the middle ground or in the distance. The character of the landscape from middle ground perspective would be partially retained, meeting the standards of the VRM III classification.

The L14 1N100 well pad and the compressor station would be added to the oil and gas development already within Fletcher Gulch and contribute to the changed visual character of that area viewed both from the foreground and from RBC Road 122 above Fletcher Gulch. The Calamity Ridge trunk pipeline along RBC Road 103 would be immediately adjacent to the roadway and thus very evident in the foreground. None of these features would be visible in the middle ground or at a distance. Viewed from the foreground, the changes would appear to alter the natural character of the landscape and not meet the standards of the VRM II classification. From the middle-background, the character of the landscape would be retained, meeting the standards of the VRM II classification.

Environmental Consequences of the No Action Alternative: None

Mitigation: All permanent (onsite for six [6] months or longer) structures, facilities and equipment placed onsite shall be low profile and painted Munsell Soil Color Chart Juniper Green or equivalent within six months of installation.

Disturbed areas on well pads not needed for production equipment shall be restored as nearly as possible to their original contours and seeded. Cut and fill slopes shall be stabilized with vegetation, matting or equivalent measures to prevent erosion and reduce the color contrast. (See required reclamation measures in the Vegetation Section.)

WILD HORSES

Affected Environment: The areas affected by the proposal are outside the designated management area for wild horses. However, horses that have wandered outside the management area are occasionally observed in areas near the proposed facilities. Considerable horse sign (manure piles and tracks) was noted at the N151N100 well location.

Environmental Consequences of the Proposed Action: No impact to wild horses or their management area is anticipated from the proposed actions.

Environmental Consequences of the No Action Alternative: None

Mitigation: None.

CUMULATIVE IMPACTS SUMMARY: Cumulative impacts from oil and gas development were analyzed in the White River Resource Area PRMP/FEIS. Current development, including the actions proposed in the Calamity Ridge project area, has not exceeded the foreseeable development analyzed in the PRMP/FEIS.

REFERENCES CITED

Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Commission (WQCC), 2004a. Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin. Adopted 1983 and Effective January 20, 2004.

CDPHE-WQCC, 2004b. "Status of Water Quality in Colorado – 2004, The Update to the 2002 305(b) Report," April.

CDPHE-WQCC, 2004c. "Regulation No. 93, 2004 Section 303(d) List Water-Quality-Limited Segments Requiring TMDLs," effective May 31.

CDPHE-WQCC, 2004d. "Regulation No. 94, Colorado's Monitoring and Evaluation List," effective May 31.

Colorado Division of Water Resources (DWR), 2005. On-line permit locator available on the internet at http://165.127.23.116/website/lttools

Conner, Carl E. 2005. ADDENDUM: Class III Cultural Resources Inventory for the Proposed Calamity Ridge Compressor Site and Pipeline Project in RBC, Colorado for Encana Oil and Gas (USA) Inc. Grand River Institute. Grand Junction, Colorado.

Conner, Carl E. 2005, Class III Cultural Resources Inventory for a Proposed Pipeline Corridor (3.4 miles) Along County Road 24X in Rio Blanco County, Colorado for Encana Oil and Gas (USA), Inc. Grand River Institute. Grand Junction, Colorado.

Conner, Carl E. 2005. Class III Cultural Resources Inventory of a Short Segment (1600 Feet) of a Proposed Access Road to the Calamity Ridge Unit Compressor in Rio Blanco County, Colorado. Grand River Institute. Grand Junction, Colorado.

Conner, Carl E. and Barbara J. Davenport. 2005. ADDENDUM: Class III Cultural Resources Inventory for Proposed Pipeline Corridor (3.4 miles) along County Road 24X in Rio Blanco County, Colorado for Encana Oil and Gas (USA) Inc. Grand River Institute. Grand Junction, Colorado.

Conner, Carl E. and Barbara J. Davenport. 2005. Class III Cultural Resource Inventory Report for the Proposed Calamity Ridge Compressor Site and Pipeline Project in Rio Blanco County, Colorado for EnCana Oil and Gas (USA) Inc. Grand River Institute. Grand Junction, Colorado.

Conner, Carl E. and Barbara J. Davenport. 2005. Class III Cultural Resources Inventory Report for the Encana Ridge Unit CRU 4412C L-14 and CRU 4414D N-15 Well Locations in Rio Blanco County, Colorado for EnCana Oil and Gas (USA) Inc. Grand River Institute. Grand Junction, Colorado.

Foutz , Dell R. 1994. Geology of Colorado Illustrated. Grand Junction, CO.

Tobin, Robert L. 1987. Oil Shale, Water Quality in the Piceance Basin, Water Resources, and Valuable Minerals of the Piceance Basin, Colorado: the Challenge and Choices of Development, USGS Professional Paper 1310.

Topper, R., K.L. Spray, W.H. Bellis, J.L. Hamilton, and P.E. Barkmann. 2003. Groundwater Atlas of Colorado, Special Publication 53. Prepared for State of Colorado Department of Natural Resources, Division of Minerals and Geology. Colorado Geological Survey. Denver, Colorado.

Tweto, Ogden. 1979. Geologic Map of Colorado. United States Geologic Survey**,** Department of the Interior. Reston, Virginia.

United States Department of Agriculture, Natural Resources Conservation Service (NRCS), 1982. Soil Survey of Rio Blanco County Area, Colorado. Prepared in cooperation with Colorado Agricultural Experiment Station and U.S. Department of the Interior, Bureau of Land Management. Washington, D.C.

USDI Bureau of Land Management, Colorado. 1997. White River Record of Decision and Approved Resource Management Plan (ROD/RMP). Meeker, Colorado.

Wygant, T. November, 2005. Personal communication with John Gray. Colorado Division of Wildlife.

PERSONS / AGENCIES CONSULTED: None

INTERDISCIPLINARY REVIEW:

Project Team		
Name	**Title**	**Area of Responsibility**
BLM Oversight		
Keith Whitaker	Natural Resource Specialist	Project Lead; Visual Resource Management
Paul Daggett	Mining Engineer	Geology and Minerals
Ed Hollowed	Wildlife Biologist	Migratory Birds; Threatened, Endangered and Sensitive Animal Species; Wildlife; Wetlands and Riparian Zones
Tamara Meagley	Natural Resource Specialist	Areas of Critical Environmental Concern; Threatened and Endangered Plant Species
Chris Ham	Outdoor Recreation Planner	Recreation; Wilderness; Access and Transportation
Mark Hafkenschiel	Rangeland Management Specialist	Vegetation; Invasive, Non-Native Species; Rangeland Management
Gabrielle Elliott	Archeologist	Cultural and Paleontological Resources
Nate Dieterich	Hydrologist	Air Quality; Water Quality, Surface and Ground; Hydrology and Water Rights; and Soils
Penny Brown	Realty Specialist	Realty Authorizations
Ken Holsinger	Natural Resource Specialist	Fire Management
Robert Fowler	Forester	Forest Management
Marvin Hendricks	Petroleum Engineer	Wastes, Hazardous or Solid
WestWater Engineering (Third Party Contractor)		
Dan McWilliams	Senior Engineer	Air Quality; Water Quality, Surface and Ground; Hydrology and Water Rights; Geology and Minerals; and Soils
Steve Moore	Environmental Scientist	Areas of Critical Environmental Concern; Cultural Resources; Paleontological Resources; Wastes, Hazardous or Solid; Access and Transportation; Wilderness; Realty Authorizations; Recreation; and Visual Resources
Rusty Roberts	Range Conservationist	Threatened and Endangered Plant Species; Invasive, Non-Native Species; Wetlands and Riparian Zones; Vegetation; Fire Management; Rangeland Management; and Wild Horses
John Gray	Wildlife Biologist	Migratory Birds; Threatened, Endangered and Sensitive Animal Species; Wildlife, Terrestrial and Aquatic
Mike Klish	Environmental Scientist	Forest Management

Finding of No Significant Impact/Decision Record (FONSI/DR)

CO-110-2006-021-EA

FINDING OF NO SIGNIFICANT IMPACT (FONSI)/RATIONALE: The environmental assessment, analyzing the environmental effects of the proposed actions, has been reviewed. The approved mitigation measures (attached to the APDs as Conditions of Approval) for the proposed actions – wells 4412C L14 1N100 and 4414D N15 1N100 in the Calamity Ridge Unit with their associated access roads and tie-in pipelines, a gathering pipeline along Trail Canyon (County Road 24X), and a trunk pipeline along Calamity Ridge (County Road 103), serialized as COC69322 - result in a finding of no significant impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the above proposed actions.

WestWater Engineering, an environmental consulting firm, with the guidance, participation, and independent evaluation of the Bureau of Land Management (BLM) prepared this document. The BLM, in accordance with 40 CFR 1506.5 (a) and (c), is in agreement with the findings of the analysis and approves and takes responsibility for the scope and content of this document.

DECISION/RATIONALE: It is my decision to approve the pipelines applied for in the right-of-way application, which are the gathering pipeline along Trail Canyon (County Road 24X), the trunk pipeline along Calamity Ridge (County Road 103), serialized as COC69322; and the proposed well pad development for L14 1N100 (#4412C) and N15 1N100 (#4414D) in the Calamity Ridge Unit with the mitigation listed below. The proposed actions are in concert with the objectives of the White River ROD/RMP in that they would allow development of federal oil and gas resources in a manner that provides reasonable protection for other resource values. Protection for other resource values will be assured by implementation of the mitigation measures described below and attached to the APDs as Conditions of Approval and attached to the right-or-way grant as stipulations. Specific mitigation has been identified for well pad N15 1N100 (#4414D) which will need be to be addressed prior to APD approval.

MITIGATION MEASURES:

1. The proponent is responsible for abatement of dust created by construction or by project-related traffic. Potential dust abatement tools could include, among others, periodic watering as described in EnCana's 13 Point Surface Use Plan (2.K), other methods of treating road surfaces, and restriction of vehicle speed to levels that would minimize dust.

2. Permitting of all regulated air pollution sources through the Colorado Department of Public Health and Environment (CDPHE), Air Pollution Control Division, will assure compliance with all federal and state standards. The proponent will provide evidence to BLM that necessary permits have been acquired.

3. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days, the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places,
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary),
- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

4. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4 (c) and (d), the holder must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the AO.

5. A monitor will be required on the Calamity Ridge pipeline in the vicinity of site 5RB 1519.

6. Eliminate any noxious or invasive plants before any seed production has occurred. Eradication should make use of materials and methods approved in advance by the Authorized Officer.

7. The operator will clean all off-road equipment to remove seed and soil prior to commencing operations on public lands within the project area.

8. The operator shall prevent use by migratory birds of reserve pits that store or are expected to store fluids which may pose a risk to such birds (e.g., migratory waterfowl, shorebirds, wading birds and raptors) during completion and after completion activities have ceased. Methods may include netting, the use of bird-balls, or other alternative methods that effectively prevent bird use and that meet BLM approval. It will be the responsibility of the operator to notify the BLM of the method that will be used to prevent bird use two weeks prior to beginning completion activities. The BLM-approved method will be applied within 24 hours after completion

activities have begun. All lethal and non-lethal events that involve migratory birds will be reported to the Petroleum Engineering Technician immediately.

9. The operator shall be required to collect and properly dispose of any solid wastes generated by the proposed actions.

10. Oil and gas development activities that exceed five acres of disturbance are required to obtain a storm water discharge permit from the Colorado Department of Public Health and Environment, Water Quality Control Division. As a condition of the permit, a Storm Water Management Plan (SWMP) will be developed showing how Best Management Practices (BMPs) are used to control runoff and sediment transport. The applicant is required to have a copy of the SWMP on file with the Meeker Field Office for disturbances that exceed five acres.

11. The White River Record of Decision and Approved Resource Management Plan (July, 1997) includes a list of standard Conditions of Approval to be applied to All Surface Disturbing Activities (COAs 1-12) and to Road Construction and Maintenance (COAs 13-62). The applicant is required to be familiar with those standard COAs and to implement them as on-site conditions warrant.

12. The proposed access road crossing an unnamed tributary of Fletcher Gulch at the west end of well pad L14 1N100 will include an adequately sized culvert and will include suitable materials (e.g. rip-rap) to stabilize the channel at the upstream and downstream ends of the culvert. The crossing will be designed and constructed in accordance with BLM Manual 9112. The design, review, and evaluation would be accomplished under the direct supervision of a registered professional engineer. The crossing would be designed to minimize impacts on water quality and provide streambed stabilization downstream of the crossing.

13. The actively eroding gully along the north fill slope of pad L14 1N100 will be stabilized through the placement of additional fill material and/or rock.

14. The east pad corner (adjacent to the Fletcher Gulch west slope) of pad L14 1N100 will be sufficiently rounded or trimmed to provide adequate space for installation, function, and repair of stormwater best management practices (BMPs). The steep west slope of the Fletcher Gulch drainage below the east pad corner will be stabilized through application of seed, fertilizer (if necessary), and biodegradable fabric such as jute netting to promote increased density of vegetation.

15. The Operator will be responsible for complying with all local, state, and federal water quality regulations as well as provide documentation to the BLM that they have done so.

16. Segregation of topsoil material and replacement of top soil in its respective original position (last out, first in) would assist in the reestablishment of soil health and productivity.

17. All disturbed areas for the pipelines and well pads with the exception of the access road travel surface and the area around well pad production facilities would be reclaimed within the

first growing season or prior to the first full growing season following disturbance with the following seed mix:

Recommended Calamity Ridge Seed Mix

Species	Variety (cultivar)	Seeding Rate (PLS*/Ac)
Grasses		
Slender Wheatgrass	San Luis	2.0 lbs
Beardless Bluebunch Wheatgrass	Whitmar	2.0 lbs
Thickspike Wheatgrass	Critana	1.0 lbs
Indian Ricegrass	Rimrock	2.0 lbs
Western Wheatgrass	Rosanna	2.0 lbs
Forbs		
Utah Sweetvetch		1.0 lbs
Scarlet Globemallow		0.5 lbs
Alfalfa	Travois, inoculated	1.0 lbs
Shrubs		
Antelope Bitterbrush		1.0 lbs
*Pure Live Seed		Total 11.5 lbs/pls/ac

Successful re-vegetation should be achieved within three years. The operator will be required to monitor the project site(s) for a minimum of three years post construction to detect the presence of noxious/invasive species. Any such species that occur will be eradicated using materials and methods approved in advance by the Authorized Officer.

18. Areas of the two well pads not used during any production phase, including cut and fill slopes, would be contoured to a slope of about 5:1, and would have topsoil redistributed and re-vegetated with the Seed Mixture noted above prior to the first full growing season following completion of drilling.

19. Final reclamation of roads and well pads following abandonment would be achieved with the predominantly native seed mix noted above. Forb seed should be broadcast separately from grass seed and lightly dragged.

20. Ball Cactus Mitigation (well pad N15 1N100): The access road/pipeline to this location will be relocated to avoid the small ball cactus (*Pediocactus simpsonii*) population. Relocating the route onramp from County Road 122 farther west and routing the road farther south to enter the pad near the southwest corner of the pad would avoid the population. Alternately, relocating the road onramp off County Road 122 to the east closer to the pad and entering the pad near the northwest corner would also avoid the population. BLM will flag the area to be avoided.

21. The gathering pipeline between the two proposed well pads in Fletcher Gulch will be routed on the uphill (south) side of the access road within 300 feet of nest site #1 (at 12 T 704770mE 4436757mN). Site construction and well drilling at location L14 1N100 will be restricted to the period outside an April 15 to August 1 window or until it has been determined that the raptor nests within ¼ mile of the well are not occupied or the young have fledged.

22. The proponent will be responsible for employing the means to effectively deter subsequent vehicular travel (including ATVs) on those portions of the right-of-way that deviate from positions immediately adjacent to existing roads through the life of the project. This objective is particularly pertinent to the pipeline route on Public Land between Fletcher Gulch and RBC 122 (T1N R100W section 24 S1/2).

23. In the event surface disturbances (e.g., pad or pipeline installation within 0.25 mile) or well development activity (e.g., drilling, completion) associated with the L14 1N100 pad would coincide with the raptor nest season (between 15 April and 1 August), activity would be deferred until after 15 May and the nest sites documented in the WestWater Biological Report shall be resurveyed to determine occupancy status.

24. The applicant is required to assure that public traffic on county roads would not be obstructed by construction of the project. Traffic delays for movement of construction equipment would be brief.

25. From the White River Resource Management Plan of 1997, Appendix B, Number 7. All trees removed in the process of construction shall be purchased from the Bureau of Land Management. The trees shall be cut with a maximum stump height of six inches, cut into four-foot lengths, down to four inches in diameter and placed along the edge of the disturbance. Root balls will be placed on the right-of-way following seeding to prevent vehicle access of the right-of-way.

26. All exposed rock outcrops in the project area shall be examined by an approved paleontologist with a report detailing the results of the inventory and any mitigation recommendation shall be submitted to the BLM prior to the initiation of construction on any of the well pads or associated roads and pipelines. A monitor shall be present at any time that it becomes necessary to excavate into the underlying bedrock formation in order to bury pipelines, level well pads or excavate reserve/blooie pits, or to construct any project features.

27. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing paleontological sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear to be of noteworthy scientific interest
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible)
-

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has

been completed, the operator will then be allowed to resume construction.

28. Calamity Ridge Pipeline: Construction of the pipeline would involve crossing two livestock fences. The applicant will be required to maintain a functional temporary fence at all times at each crossing and at any point the pipeline would parallel a fence. Upon completion of the pipeline, the applicant will be required to construct or rebuild a permanent fence to BLM specifications at any location where a fence is affected by the project.

29. Well Pad N15 1N100 (#4414D): The applicant shall be required to relocate the boundary fence to the south of the well pad and to construct the new fence in accordance with BLM specifications.

30. The applicant shall meet with the permittee and a BLM representative to discuss and decide on a new location/construction of the corral and chute. A map will be provided showing the location of the new facility. Also, a signed agreement from the permittee needs to be submitted to BLM, stating that the permittee is satisfied with the location/construction of the range improvement facilities. The applicant will be required to relocate the corral to the agreed location. If no agreement can be reached, BLM will be required to issue the grazing permit holder a decision to remove the facility. The decision will have to provide ample time for removal, as well as, the right to protest and appeal the decision.

31. The Conditions of Approval for the proposed wells would be made a part of the right-of-way grant stipulations plus any standard stipulations from the BLM right-of-way manual that applies. The extra work width of 30 feet would be reclaimed and recontoured immediately after construction has been completed and weather permits.

32. A "Notice to Proceed" stipulation would be included in the right-of-way grant for the pipelines, indicating that construction of the pipelines would only be permitted to begin when the wells are approved, constructed and producing.

33. All permanent (onsite for six [6] months or longer) structures, facilities and equipment placed onsite shall be low profile and painted Munsell Soil Color Chart Juniper Green or equivalent within six months of installation.

34. Disturbed areas on well pads not needed for production equipment shall be restored as nearly as possible to their original contours and seeded. Cut and fill slopes shall be stabilized with vegetation, matting or equivalent measures to prevent erosion and reduce the color contrast. (See required reclamation measures in the Vegetation Section.)

NAME OF PREPARER: WestWater Engineering
2516 Foresight Circle #1
Grand Junction, CO 81505
Telephone: (970) 241-7076

NAME OF ENVIRONMENTAL COORDINATOR: Caroline Hollowed

SIGNATURE OF AUTHORIZED OFFICIAL: Kent E. Walter
Field Manager

DATE SIGNED: 02/27/06

ATTACHMENTS: Figure 1-Location Map of the Proposed Action
Figure 2-Map of the Calamity Ridge Project Area

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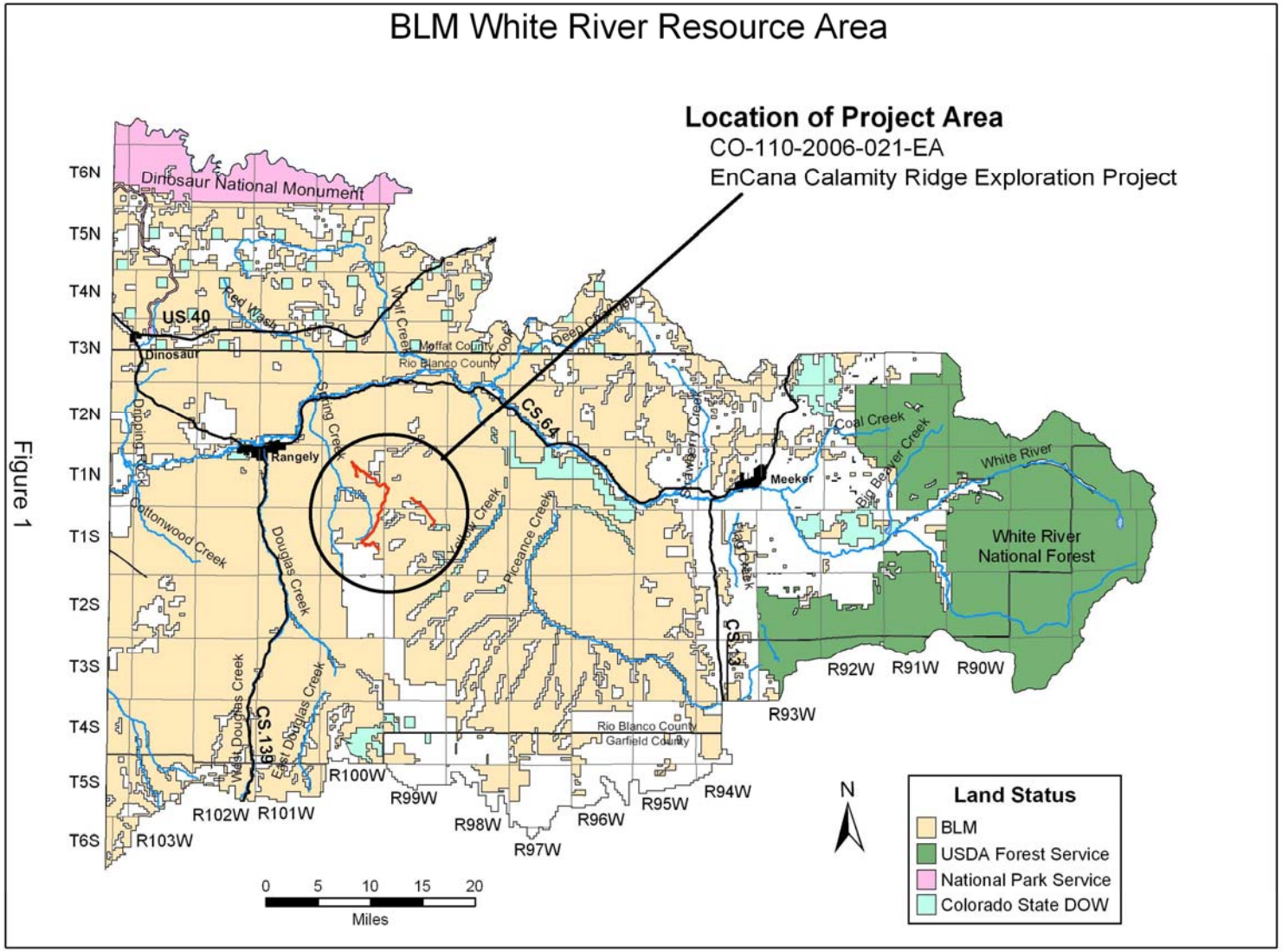
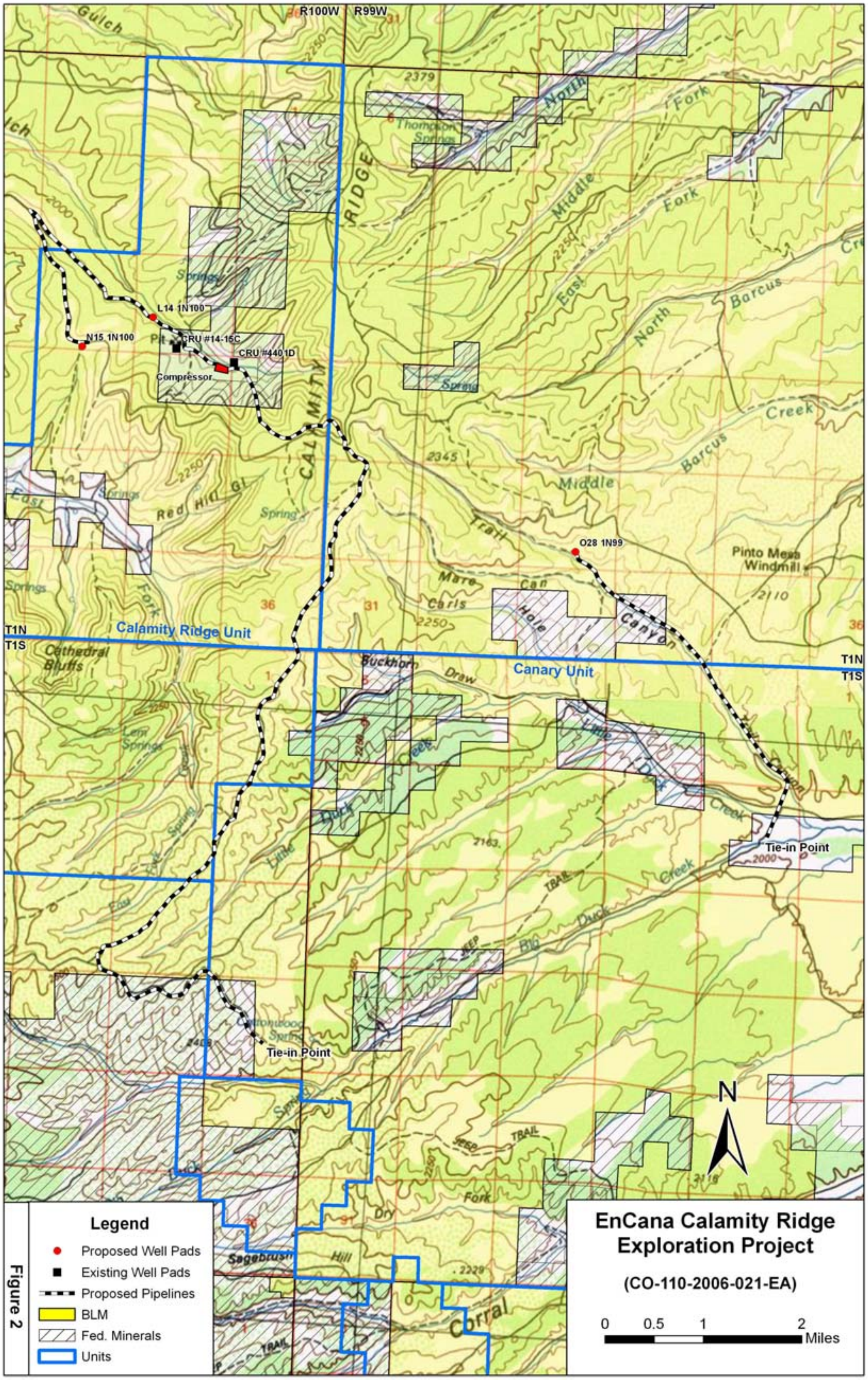

BLM White River Resource Area
Location of Project Area
CO-110-2006-021-EA
EnCana Calamity Ridge Exploration Project
Dinosaur National Monument
US 40
Dinosaur
Rangely
Meeker
Moffat County
Rio Blanco County
Garfield County
CS 64
CS 139
CS 13
Red Wash
Wolf Creek
Deep Channel
Lawery Creek
Coal Creek
Big Beaver Creek
White River
White River National Forest
Douglas Creek
Cottonwood Creek
Spring Creek
Yellow Creek
Piceance Creek
Black Peak
West Douglas Creek
East Douglas Creek
T6N
T5N
T4N
T3N
T2N
T1N
T1S
T2S
T3S
T4S
T5S
T6S
R103W
R102W
R101W
R100W
R99W
R98W
R97W
R96W
R95W
R94W
R93W
R92W
R91W
R90W
0 5 10 15 20
Miles
N
Land Status
BLM
USDA Forest Service
National Park Service
Colorado State DOW

Figure 1



R100W
R99W
L14 1N100
N15 1N100
Pit
CRU #14-15C
CRU #4401D
Compressor
O28 1N99
Pinto Mesa Windmill
T1N
T1S
Calamity Ridge Unit
Canary Unit
Tie-in Point
Tie-in Point
Legend
Proposed Well Pads
Existing Well Pads
Proposed Pipelines
BLM
Fed. Minerals
Units
Figure 2
EnCana Calamity Ridge Exploration Project
(CO-110-2006-021-EA)
0 0.5 1 2 Miles
N